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Investigating the global stakeholder engagement process that informed the development of the Key Biodiversity Area Standard

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(née Boucher)

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Declaration

I declare that, except where otherwise indicated, this thesis is entirely my own work. No part of it has been submitted for any other degree or professional qualification.

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Abstract

This thesis investigated the development of the Global Standard for the Identification of Key Biodiversity Areas (KBA Standard), which is a new approach to identifying important sites for biodiversity. Key Biodiversity Areas are defined as sites contributing significantly to the global persistence of biodiversity. The KBA Standard was developed through a global stakeholder engagement process convened by the International Union for Conservation of Nature's Joint Task Force on Biodiversity and Protected Areas (IUCN Task Force). The engagement process included four main components: (i) technical workshops with subject experts; (ii) interviews and an online questionnaire with end-users; (iii) regional events with additional interested stakeholders; and (iv) an open online consultation where stakeholders were invited to review the draft KBA Standard.

The aim of this thesis was to use an action research approach to work with the IUCN Task Force to analyse the end-user component of the global stakeholder engagement process. End-users were defined during the engagement process as those who lead or influence decision-making processes linked to mechanisms that secure biodiversity or that avoid biodiversity loss. The main objectives of this research were to: (i) clarify the purpose of engaging end-users by examining the use of normative, instrumental, and substantive rationales; (ii) use mixed methods to gain an understanding of end-users' needs and concerns; (iii) categorise and analyse end-users' needs and concerns by sector and region; (iv) assess the end-user engagement process through a summative evaluation; (v) examine how end-user input was used to inform the development of the KBA Standard; and (vi) develop a set of recommendations related to global end-user engagement practice.

The analysis indicated that the IUCN Task Force used a blend of instrumental and substantive rationales to justify engaging end-users. Five main categories of end-user needs and concerns emerged from the analysis of the qualitative interview

data: (i) the need for communication and local stakeholder engagement; (ii) the potential for the KBA Standard to either complement or conflict with existing approaches; (iii) the need for clarity regarding the scale at which KBAs can be identified (i.e. global, regional, and/or national); (iv) concerns about the implementation of the KBA Standard, including data availability, timeliness, and resources; and (v) comments about how KBAs inform decision-making, including management options, sustainable use, and prioritisation. These topics were examined in depth through the qualitative interviews and in breadth through the quantitative questionnaire. The results demonstrate a high level of convergence in opinion on many topics; however, four topics resulted in a divergence in opinion between end-users, including: (i) the scale at which KBAs are identified; (ii) the prioritisation of KBAs over other areas; (iii) whether KBA data should be made freely available; and (iv) whether development activities should be permitted in KBAs. These areas of divergence were analysed further by categorising end-user questionnaire responses by sector and region. The results have important implications for how end-users are identified, categorised, and engaged and highlight the complex and individual nature of end-users' needs and concerns. The summative evaluation analysed the purpose, process, outputs, and outcomes against a typology of engagement and principles of good practice for international standard setting to reflect upon how end-users' needs and concerns were integrated into the development of the KBA Standard. This indicated both the strengths and weaknesses of the engagement approaches used and informed the development of 11 recommendations to inform future similar processes.

This thesis ultimately helps to bridge the gap between stakeholder engagement theory and practice and provides insight into the challenges and benefits of using a mixed methods action research approach to investigate a global stakeholder engagement process.

Keywords: Global stakeholder engagement, end-users, key biodiversity areas, biodiversity conservation, action research

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Acronyms

CBD: Convention on Biological Diversity

EBSA: Ecologically and Biologically Significant Areas

GEO: Global Environment Outlook

IPBES: Intergovernmental Panel on Biodiversity and Ecosystem Services

ISEAL Alliance: International Social and Environmental Accreditation and Labelling Alliance

IUCN: International Union for Conservation of Nature

IUCN Task Force: International Union for Conservation of Nature Species Survival Commission and World Commission on Protected Areas Joint Task Force on Biodiversity and Protected Areas

KBA: Key Biodiversity Area

KBA Standard: Global Standard for the Identification of Key Biodiversity Areas

NBSAPs: National Biodiversity Action Plans and Strategies

OECMs: Other Effective Area Based Mechanisms

SDGs: Sustainable Development Goals

SSC: Species Survival Commission

TBC: The Biodiversity Consultancy

UN: United Nations

UN Region: There are five United Nations Regional Groups, including the African Group, Asia-Pacific Group, Eastern Europe Group, Latin American and Caribbean Group, and Western Europe and Others Group.

WCC: World Conservation Congress

WCPA: World Commission on Protected Areas

WPC: World Parks Congress

ZSL EDGE: Zoological Society of London Evolutionarily Distinct and Globally Endangered

Terms

Existing approaches: refers to existing site-scale approaches to identifying and designating areas of importance for biodiversity.

Interdisciplinary studies: "projects that involve several unrelated academic disciplines in a way that forces them to cross subject boundaries to create new knowledge and theory and solve a common research goal. By unrelated, we mean that they have contrasting research paradigms. We might consider the differences between qualitative and quantitative approaches or between analytical and interpretative approaches that bring together disciplines from the humanities and the natural sciences." Tress *et al.* (2005: 17)

Knowledge product: global public goods developed by the IUCN by mobilising data, processes, tools, and products towards the conservation and sustainable use of biodiversity.

Multidisciplinary studies: *"projects that involve several different academic disciplines researching one theme or problem but with multiple disciplinary goals. Participants exchange knowledge, but do not aim to cross subject boundaries to create new knowledge and theory. The research process progresses as parallel disciplinary efforts without integration but usually with the aim to compare results."* Tress *et al.* (2005: 15)

'No go': 'No go' for development is a term that is commonly used to refer to decisions related to limiting human activities in particular areas of importance for biodiversity (also referred to as 'no-go').

Stakeholder engagement: engagement with those who have a stake or interest (whether directly or indirectly) in the process rather than with the general public. Stakeholder engagement includes the full spectrum of ways to engage stakeholders, including: communication, consultation, and participation.

Transdisciplinary studies: "projects that both integrate academic researchers from different unrelated disciplines and non-academic participants, such as land managers and the public, to research a common goal and create new knowledge and theory. Transdisciplinarity combines interdisciplinarity with a participatory approach." Tress *et al.* (2005: 17)

Usual suspects: typical stakeholders that are often targeted for engagement.

1 Introduction

Biodiversity conservation is a transdisciplinary field that incorporates a plurality of perspectives and motivations (Wilson, 1999; Mace, 2014). To address biodiversity loss, policy and practice need to be based upon reliable knowledge that transcends sector specific and disciplinary boundaries (Hadorn *et al.* 2006). A blend of disciplinary, multidisciplinary, interdisciplinary, and transdisciplinary approaches (as defined in Tress *et al.* 2005) are necessary to understand and manage environmental challenges, such as biodiversity loss.

This thesis investigates a transdisciplinary knowledge production process that crosses the boundaries between disciplines, sectors, and regions and that integrates input from stakeholders working on conservation research, policy, and practice. The knowledge production process that this thesis examines is the development of the International Union for Conservation of Nature's (hereafter referred to as IUCN) Global Standard for the Identification of Key Biodiversity Areas (hereafter referred to as the KBA Standard). Key Biodiversity Areas (hereafter referred to as KBAs) are sites contributing significantly to the global persistence of biodiversity. The KBA Standard draws and builds upon over 30 years of experience in identifying areas of importance for biodiversity (IUCN, 2016a) and was proposed to consolidate existing approaches to identifying areas of importance for biodiversity under a single umbrella methodology (Foster *et al.* 2012).

The KBA Standard was developed through a global stakeholder engagement process convened by the IUCN Joint Task Force on Biodiversity and Protected Areas (hereafter referred to as the IUCN Task Force). The engagement process included four main components: (i) technical workshops with subject experts; (ii) interviews and an online questionnaire with end-users; (iii) regional events with additional interested stakeholders; and (iv) an open online consultation where

stakeholders were invited to review the draft KBA Standard. This thesis investigates the end-user engagement component in particular. End-users were defined during the first technical workshop as those who lead or influence decision-making processes linked to mechanisms that secure biodiversity or that avoid biodiversity loss (IUCN, 2012b). End-users require information about where the most important places for biodiversity are in order to make decisions regarding safeguarding, restoring, protecting, or developing these places.

Several concepts and theories are used in this thesis to frame the end-user engagement process, including: knowledge production, transfer, exchange, and use and the role of stakeholder engagement within these. Stakeholder engagement is increasingly being used as an approach to bridge research, policy, and practice (van den Hove, 2007). The transfer and exchange of knowledge that occurs through various forms of stakeholder engagement requires collaboration and partnerships and an understanding of how knowledge is both produced and used. Combining knowledge through transdisciplinary research has been proposed as one way to integrate diverse sources of knowledge to inform decision-making (Tress *et al.* 2005; Pruitt and Waddell, 2005). This thesis investigates the knowledge production and use context of the development of the KBA Standard to gain an understanding of the purpose, process, outputs, and outcomes of engaging end-users.

One distinction that has been made in the way knowledge is produced, proposed by Gibbons *et al.* (1994) and later updated by Nowotny *et al.* (2003), differentiates between 'Mode 1' and 'Mode 2' knowledge production. 'Mode 1' knowledge production is characterised by a paradigm of scientific discovery, disciplinary focus, and the autonomy of scientists and their institutions (Nowotny *et al.*, 2003). 'Mode 2' knowledge production is said to operate through application-oriented transdisciplinary collaborations, involving heterogeneous practices and principles, increased reflexivity and social accountability (Hessels and van Lente, 2008). In the

context of this thesis, 'Mode 1' and 'Mode 2' forms of knowledge production offer a way of conceptualising both the technical scientific processes and the pragmatic, applied, and user-oriented approaches used to develop the KBA Standard.

1.1 Research approach

Recognising and examining the interactions that take place between the natural and social sciences helps to build understanding of the complex interplay that exists between research, policy, and practice (Song and M'Gonigle, 2001). There is increasing recognition that conservation is as much about social factors as it is about species or ecosystems and that the debate is not about whether to integrate the social sciences into conservation but how to do so (Mascia *et al.* 2003).

Sandbrook *et al.* (2013) make a distinction about the use of social science in biodiversity conservation to help researchers, practitioners, and activists in debates about conservation understand each other and communicate with one another about what they do and why they do it. The authors distinguish between social research *on* conservation and social research *for* conservation. In related work on collective inquiry and participatory research, Reason and Rowan (1981) and Blackstock *et al.* (2011) highlight an additional distinction, which I interpret here as social research *with* conservation.

Social research *on* conservation focuses on the conservation movement as a social phenomenon and explores topics related to motivations, practices, and partnerships to increase understanding of the practice of conservation (Sandbrook *et al.* 2013). This form of research does not necessarily seek to contribute to the underlying mission of conservation biology (the moral and practical challenge of halting biodiversity loss) and may be critical of the aims, methods, and effects of conservation (Sandbrook *et al.* 2013).

Social research *for* conservation on the other hand, does seek to contribute to the underlying mission of conservation biology by increasing understanding of the social factors that influence why, how, and when biodiversity loss occurs and which factors influence or motivate individuals to harm or protect biodiversity (Sandbrook *et al.* 2013).

Social research *with* conservation emphasises a participatory action research approach that involves collaborative inquiry (Reason and Rowan, 1981; Whyte, 1991; Heron and Reason, 2006; Blackstock *et al.* 2011) with conservation researchers, practitioners, and stakeholders. This involves taking a problem-focused approach and working in collaboration by combining diverse forms of knowledge towards an improved understanding of the social factors and phenomena at play within a specific conservation context (Blackstock *et al.* 2011). This approach values the learning and changes that can result from this form of participatory research rather than simply describing or analysing social realities (Pratt, 2000).

This thesis uses a mixed methods action research approach that involves working in collaboration *with* the IUCN Task Force *on* the end-user engagement process *for* the development of the KBA Standard. It therefore uses a combination of social science *with*, *on*, and *for* conservation. The primary aim of this research was to work with the IUCN Task Force to understand and evaluate the purpose, process, outputs, and outcomes of engaging end-users towards improved reflection, learning, and ultimately practice. This involved working closely with five practitioner partners from the IUCN Task Force by collaboratively defining the research problems, designing and implementing the research methods, and evaluating the end-user engagement process.

1.2 Research objectives, questions and structure

The main objectives of this research were: (i) to clarify the purpose of engaging end-users in the development of the KBA Standard by examining the use of normative, instrumental, and substantive rationales; (ii) to use mixed methods to gain an understanding of end-users' needs and concerns; (iii) to categorise and analyse end-users' needs and concerns by sector and region; (iv) to assess the end-user engagement process through a summative evaluation; (v) to examine how end-users' input was used to inform the development of the KBA Standard; and (vi) to develop a set of recommendations related to global end-user engagement practice.

These objectives relate to four research questions:

1. *Why did the IUCN Task Force engage end-users and which end-users did they engage (**Chapter 5**)?*

The IUCN Task Force's initial lack of consideration of the rationales that motivated the end-user engagement process led me to pose the question of why the IUCN Task Force engaged end-users. In **Chapter 5,** I examine the origin of the concept of engaging end-users and use questions from the summative evaluation to reflect upon the purpose of the end-user engagement process with my practitioner partners. In **Chapter 5** I also explore which end-users were engaged. I demonstrate how the IUCN Task Force used a blend of instrumental and substantive rationales to justify engaging end-users and the ways in which end-users were identified and categorised. The results indicate a gap between what is known about stakeholder engagement theory and how stakeholder engagement is conducted in practice.

2. *What are end-users' needs and concerns (**Chapter 6**)?*

After examining why the IUCN Task Force engaged end-users and analysing which end-users were engaged, I then investigate how end-users were engaged and what was learned about end-user needs and concerns. This involved the use of mixed qualitative (interviews) and quantitative (questionnaire) methods to explore end-users' needs and concerns. The results demonstrated that there was a high level of convergence in opinion on many topics; however, four topics resulted in a divergence in opinion between end-users. These areas of divergence relate to: (i) the implications of the scale at which KBAs are identified; (ii) the prioritisation of KBAs over other areas; (iii) whether KBA data should be made freely available; and (iv) whether development activities should be permitted in KBAs.

3. *Do end-users' needs and concerns differ by sector and region (**Chapter 7**)?*

In **Chapter 7**, I explore these main areas of divergence in end-user opinion further by categorising end-user needs and concerns by sector and region. Overall, the results indicate that in this context end-users' needs and concerns are not influenced by their sector or region, which demonstrates the complex and individual nature of end-user opinion. These results have important implications for how end-users in similar processes are be identified, categorised, and engaged.

4. *How did the IUCN Task Force use end-user input to inform the development of the KBA Standard (**Chapter 8**)?*

In **Chapter 8**, I present the results of the summative evaluation that I conducted with my practitioner partners. This involved assessing the end-user engagement process, outputs, and outcomes against a typology of engagement and principles of good practice in international standard setting. The summative evaluation also

allowed us to reflect upon how end-users' needs and concerns were (or were not) integrated into the development of the KBA Standard. This indicated both the strengths and weaknesses of the engagement approaches we used and informed the development of 11 recommendations to inform future similar processes.

The structure of this thesis, and how it relates to the research questions outlined above, is summarised in **Figure 1.1**.

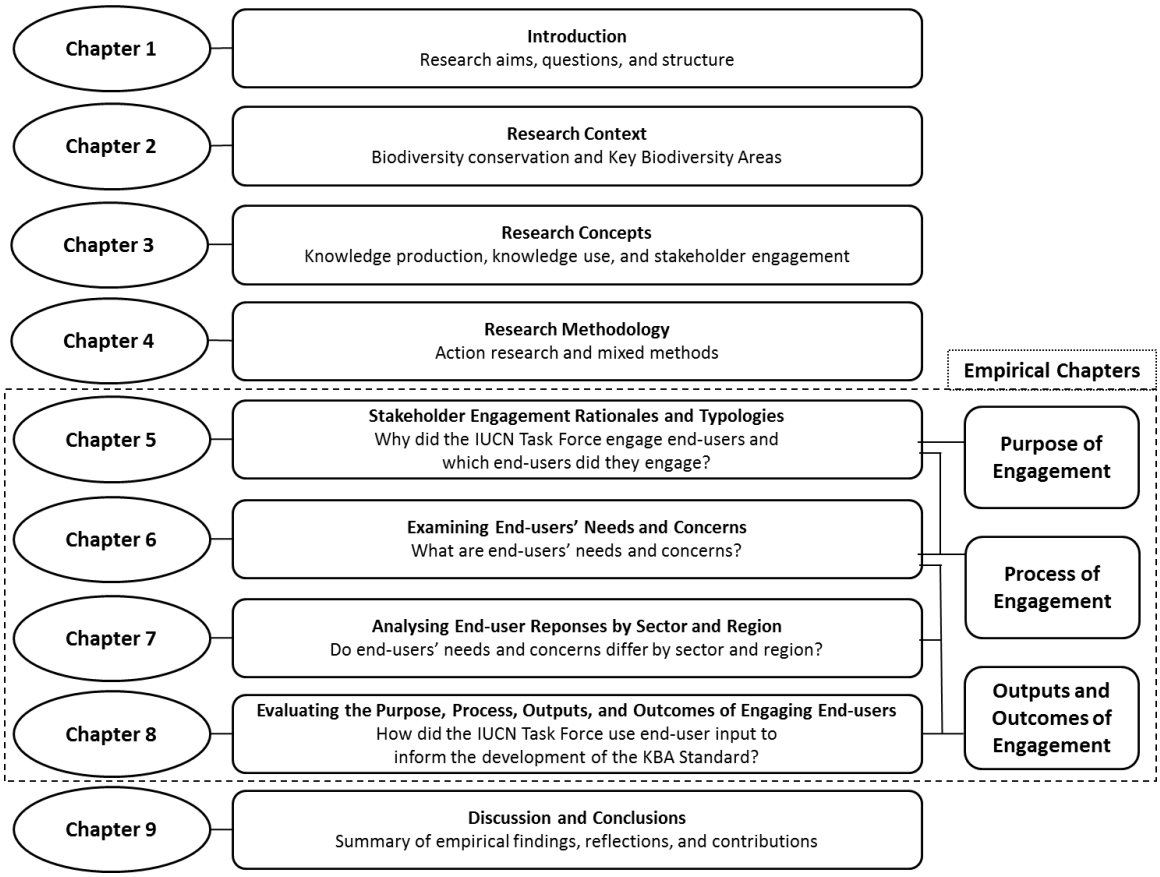


Figure 1.1. Thesis structure and research questions.

1.3 Contributions

This thesis makes several contributions that can be separated into KBA context-specific contributions and more generalisable contributions.

The KBA context-specific contributions include:

1. End-user interviews: these are documented in Dudley *et al.* (2014) and the in-depth analysis of the qualitative data is documented in this thesis.

2. End-user questionnaire: this was developed based upon the analysis of the qualitative interview data and was included in the wider KBA online consultation process and analysed in this thesis. The results were used to test hypotheses and to compare and corroborate the interpretation of the qualitative interview data.

3. Informing the development of the KBA Standard: the illumination of areas of convergence and divergence in end-users' needs and concerns through the use of mixed methods enabled a diversity of perspectives to be integrated and/or addressed during the development of the KBA Standard and the establishment of its associated governance structures.

4. Summative evaluation: the use of a summative evaluation process with practitioner partners provided a systematic way to assess and reflect upon the purpose, process, outputs, and outcomes and led to the development of a set of recommendations for future practice.

5. KBA Consultative Forum: the establishment of an on-going engagement mechanism for end-users to continue to provide input and feedback on the use of the KBA Standard and associated data and to continue to communicate their needs

and concerns. This was developed as a direct outcome of the end-user engagement process.

6. Documentation, analysis, and synthesis: combined analysis of the purpose, process, outputs, and outcomes provides a new precedent for IUCN's approach to global stakeholder engagement.

The generalisable contributions include:

1. Theory and practice: the close interplay between stakeholder engagement theory and practice provides new insight into the use of 'Mode 1' and 'Mode 2' knowledge production in the context of a global stakeholder engagement process.

2. Mixed methods action research: the use of a blend of research approaches and methods to work *with*, *on,* and *for* conservation at the global scale provides a new, if challenging, way of considering how social science research can both collaboratively and critically inform conservation research, policy, and practice.

3. International good practice: the tailored use of principles of good practice in international standard setting to evaluate an end-user engagement process provides a way to assess, reflect, document, and share strengths and weaknesses to inform learning and practice.

4. Recommendations: the development of a set of purpose, process, output, and outcome recommendations based upon a summative evaluation and an assessment against principles of good practice in international standard setting provides a step towards openly sharing successes and failures to bridge the gap between theory and practice and to transfer knowledge towards improving future global engagement processes.

The next chapter (**Chapter 2**) introduces the research context by defining terms, reviewing the history of the KBA approach, describing the role of IUCN Task Force, outlining the components and timeline of the global engagement process, summarising the evolution of the KBA Standard, and linking the KBA Standard to global, regional, and national policies and processes.

2 Research Context

Biodiversity conservation is known as a mission-driven and crisis-oriented transdisciplinary field (Soule, 1985; Wilson, 1999; Tress *et al.* 2005) that incorporates a plurality of perspectives and motivations (Mace, 2014). The establishment of IUCN in 1948 was an important development in global biodiversity conservation. IUCN brings together a multitude of perspectives and motivations in an unusual transdisciplinary governance structure and network that consists of stakeholders from government, civil society, indigenous communities, business, and academia. Holdgate (1999) states that the IUCN was founded as a:

> "*…meeting ground, a facilitator and a supporter for its members…to strengthen the whole nature conservation movement by networking – through linking expert individuals and national organizations and pooling information…IUCN's most famous products have been assemblages of knowledge, drawn from the experts it has convened."*
>
> p. v-vi

This thesis examines a global process that IUCN has convened, the global stakeholder engagement[1] process that informed the development of the KBA Standard. This chapter provides the context of this research, including a brief overview of biodiversity conservation, Key Biodiversity Areas (KBAs), and the IUCN Task Force. Specifically, it outlines the IUCN Task Force's role in convening a global stakeholder engagement process that informed the development of the KBA Standard.

[1] I use the term stakeholder engagement in my research to clarify that the engagement involved in the development of the KBA Standard is with those who hold a stake or interest (whether directly or indirectly) in the process rather than with the wider general public. I define 'stakeholder engagement' as the full spectrum of ways to engage stakeholders including: communication, consultation, and participation (discussed further in **Chapter 3**).

2.1 Defining biodiversity and conservation

The term 'biological diversity' has been used in a variety of contexts for many decades; however, the way that it is now often used gained recognition in the 1970s and 1980s (Dasmann, 1968; Myers, 1979; Norse and McManus, 1980). Biodiversity (the compound word and synonym for biological diversity) was first used in relation to the 1985 National Forum on BioDiversity, sponsored by the Smithsonian Institution and the National Academy of Sciences (NAS) (Wilson, 1988). The term biodiversity has since gained acceptance and has become an increasingly important focus of international policies, international multilateral organisations, national governments, private sector institutions, state agencies, scientific organisations, non-governmental organisations, academics, and local communities. The definition of biological diversity that is used by the United Nations (UN) Convention on Biological Diversity (CBD) (and in the context of this thesis) is often considered the most commonly accepted global definition as it was negotiated and agreed by 198 parties and signed by 168 parties in 1992. The UN CBD states that:

> *"'Biological diversity' means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems."*
>
> CBD (1992: 3)

There are several disciplines concerned with the state of biological diversity on Earth. Soule (1985) and Groom *et al.* (2006) emphasise that the field of conservation biology is inherently transdisciplinary and holistic as it depends upon social science, natural resource management, economics, ecology, and biology and the questions, techniques, and methods of a multitude of other disciplines. To inform land-use decision-making, knowledge about biodiversity and ecosystems must be produced, transferred, exchanged, and used within and between different

disciplines, sectors, and regions. The complex nature of land-use decision-making contexts necessitates the integration of knowledge from a variety of disciplines, sectors, regions, and stakeholders who have different backgrounds, interests, and values.

There are both long standing and relatively new debates that focus on what conservation is, what it is for, who it is for, how it should be done, where it should be done, and why it should be done (Mace *et al.* 2000; Redford *et al.* 2003; Adams, 2004; Hunter *et al.* 2014; Mace, 2014; Holmes *et al.* 2016). Many of the historical and contemporary debates about conservation centre on differences in opinion related to why biodiversity is valued and which values are used to justify the need for a specific action or decision.

2.2 Biodiversity values

The values associated with biodiversity are complex and controversial due to their subjectivity and plurality. There are an increasing number of values that are used in a variety of different conservation decision-making contexts. Some argue that genuine scientific discourse must be value-free (Brussard et al., 1994; Drew, 1994; Murphy, 1990) and others implore that values are of critical importance to conservation (Ehrlich and Ehrlich, 1981; Rolston, 1985; Norton, 1988; Barry and Oelschlaeger, 1996; Jepson and Canney, 2003; Noss, 2007; Chan, 2008) as the field is an inherently value and mission-driven (Soule, 1985; Roebuck and Phifer, 1999; Ehrenfeld, 2000; Odenbaugh, 2003; Naess, 2005).

Many different values (and associated terms for these values) have been proposed and used in conservation, including, but not limited to: use and non-use (Crowards, 1997; Turner et al., 2003; Pascual et al., 2010), anthropocentric and non-anthropocentric (biocentric) (Hargrove, 1992; Turner et al., 2003), utilitarian and intrinsic (Callicott, 1990), instrumental and non-instrumental (Odenbaugh, 2003),

and consumptive and non-consumptive (Leader-Williams et al., 2010; Sodhi and Ehrlich, 2010). The different ways of placing value on biodiversity are not necessarily mutually exclusive to one another and are, in fact, often linked to one another (Robinson, 2010). Some argue that the adoption of a pluralistic and pragmatic approach that uses multiple goals and values to make decisions based on the reality of what might work in a particular context would lead to improved communication, relationships, and conservation outcomes (Robinson, 2011; Sandbrook *et al.*, 2011). Biodiversity certainly means different things to different people (Harper and Hawksworth, 1994) and there is plenty of scope for controversy and on-going debate. This thesis uses the CBD definition of biodiversity as outlined above and explores the development of a specific approach to identifying areas of importance for biodiversity.

2.3 Identifying sites of importance for biodiversity

The spatial patterns of biodiversity on Earth are heterogeneous; however, there are some known basic patterns and gradients, including: (i) particularly high and low areas of biodiversity (Gaston, 2000; Cincotta *et al.*, 2000); (ii) distinction between biogeographic realms (Udvardy, 1975); (iii) variation due to latitude (Jablonski et al., 2006); and (iv) changes based on altitude and depth (Sodhi and Ehrlich, 2010). Explaining these spatial patterns, understanding their implications, identifying sites of particular importance for biodiversity, and setting conservation priorities have been major areas of focus for many researchers and conservation organisations over the past few decades (Johnson, 1995; Redford *et al.* 2003; Gordon *et al.* 2005). These efforts have partly been driven by the need for better knowledge concerning how biodiversity and ecosystem processes will respond to global environmental change (Gaston, 2000).

The spatial scale at which to target conservation efforts to tackle biodiversity loss and the extinction of species is widely debated in the field of conservation biology

(Boyd *et al.*, 2008). Attempts to identify areas of importance for biodiversity have been made using a multitude of approaches and at different scales, such as: (i) global priority setting templates (Brooks *et al.*, 2006); (ii) seascape-, landscape- and ecosystem-level approaches (Franklin, 1993; Turner, 2005; Sanderson *et al.* 2002); and (iii) site-level approaches (also referred to as site-scale and area-based approaches) (Eken *et al.*, 2004; Brooks, 2010). This thesis studies the development of the KBA Standard, which is a site-level approach to identifying areas of importance for biodiversity. The KBA Standard defines a site as:

> *"a geographical area on land and/or in water with defined ecological, physical, administrative or management boundaries that is actually or potentially manageable as a single unit (e.g. a protected area or other managed conservation unit). For this reason, large-scale biogeographic regions such as ecoregions, Endemic Bird Areas and Biodiversity Hotspots, and land-/seascapes containing multiple management units, are not considered to be sites. In the context of KBAs, "site" and "area" are used interchangeably."*
>
> IUCN (2016: 10)

There are several threats to biodiversity, including but not limited to: disease, hunting, pollution, fires, climate change, invasive alien species, natural disasters, habitat fragmentation, habitat degradation, and habitat loss. The loss of habitat is generally considered to be the most prominent threat to biodiversity (and to threatened species in particular) (Baillie *et al.*, 2004). Large scale global conservation prioritisation approaches help to broadly guide conservation efforts and investment but do not inform action at the smaller scale that is often required to reduce habitat loss and to safeguard sites identified as being of particular importance to biodiversity. Given that the loss of habitat is typically a site-level phenomenon, it is logical to tackle and manage this challenge at the same scale (Brooks, 2010). Some examples of site-level approaches to conservation include: formal protected areas, community-conserved areas, community reserves, indigenous reserves, conservation easements, catchment management that

safeguards biodiversity, and other effective area-based conservation measures[2] (OECMs) (Dudley, 2008; Foster *et al.*, 2012; Jonas *et al.* 2014; MacKinnon *et al.* 2015).

The identification of site-level areas of importance for birds has been undertaken for decades for the identification of Important Bird Areas (Osieck and Mörzer Bruyns, 1981). More recently, the approach has been used for several different species in terrestrial, freshwater, and marine realms[3] and there are now a number of existing approaches to identifying, designating, and safeguarding areas of importance for biodiversity at the site-level, many of which are outlined in **Table 2.1**. These identification, designation, and safeguarding approaches have contributed to conservation policy and practice and delivered benefits for biodiversity and human well-being (Butchart et al. 2012; Larsen et al. 2012); however, the lack of a consolidated and standardised approach to identifying areas of importance for biodiversity across different species and realms can result in confusion for end-users and introduces the potential for duplication of efforts and uncertainty regarding where to channel limited time and resources.

> *"Existing schemes for prioritizing globally significant biodiversity areas are important and provide a sound basis for further development, but are not sufficient or unified."*
>
> IUCN (2012: 13)

[2] Other effective area-based conservation measures (OECMs) were introduced into CBD Aichi Target 11 to recognise the importance of approaches (other than protected areas) that contribute to the safeguarding of biodiversity.
[3] *Realms* refers to terrestrial, freshwater and marine ecosystems.

Table 2.1. Site-level approaches to identifying, designating, and safeguarding areas of importance for biodiversity.

Approach	Organisation/Institution	Year of Establishment	Key Reference
Identification Approaches			
Important Bird and Biodiversity Areas	BirdLife International	1979	Osieck and Mörzer-Bruyns, 1981
B-ranked sites (*USA)	The Nature Conservancy	1970s	TNC, 2001
eImportant Plant Areas	Plantlife International	2001	Palmer and Smart, 2001 Anderson, 2002
Important Fungus Areas (*UK)	Plantlife International, Association of British Fungus Group and the British Mycological Society	2001	Evans *et al.*, 2001
Alliance for Zero Extinction Sites	Alliance for Zero Extinction	2005	Ricketts *et al.*, 2005
Important Freshwater Biodiversity Areas	IUCN Freshwater Programme	2005	Darwall and Vie, 2005
Prime Butterfly Areas (*EU)	Butterfly Conservation Europe	2006	van Swaay and Warren, 2006
Designation Approaches			
Ramsar Wetlands	Ramsar Convention	1971	Ramsar Convention Secretariat, 2016
Natural World Heritage Sites	World Heritage Convention	1972	UNESCO, 1972
Special Protection Areas (SPAs), Natura 2000, Special Areas of Conservation (SAC) (*EU)	European Commission	1979; 1992	Birds Directive, 1979 (updated 2009) Habitats Directive, 1992
Emerald Network of Areas of Special Conservation Interest (*EU)	Council of Europe	1989	Bern Convention, 1982
Ecologically and Biologically Significant Areas	United Nations Convention on Biological Diversity	2008	Weaver and Johnson, 2012
Private Sector Safeguard Policies and International Sustainability Standards			
High Conservation Value Areas	Forest Stewardship Council and Proforest	1999	Jennings, 2004
IFC Performance Standard 6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources	International Finance Corporation	2012	IFC, 2012

To draw from and build upon the work of the existing approaches listed in **Table 2.1** and to consolidate efforts into one harmonised approach that applies across all species and realms, IUCN convened a global stakeholder engagement process to inform the development of the KBA Standard.

2.4 The International Union for Conservation of Nature and Key Biodiversity Areas

IUCN uses a democratically-elected representative governance model that includes members from diverse sectors and regions, and an elaborate democratic process for governing decisions. In 2015, Universalia (a management consulting firm) conducted an external evaluation of IUCN's governance structure and the resulting report contains additional details regarding the decision-making processes and the interactions that take place between the different IUCN bodies (Universalia, 2015). The IUCN governance structure and the various governance bodies are depicted in **Figure 2.1**. The governance structures and bodies that are most relevant to this thesis are the decision-making mechanisms related to the World Conservation Congress (WCC) and how these relate to the work of the Commissions. The IUCN Statutes and Regulations (IUCN, 2016b) include the rules of procedures for the WCC, which is held every four years. The WCC brings together stakeholders from government, civil society, indigenous communities, business, and academia and is the primary governing body of the IUCN. The IUCN has a council that is the main governing body between WCCs. IUCN currently has six Commissions that comprise a network of over 16 000 volunteer specialist memberships that provide knowledge and expertise towards fulfilling the IUCN vision[4], mission[5], and

[4] IUCN Vision: A just world that values and conserves nature.
[5] IUCN Mission: Influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.

programme[6]. The two largest IUCN Commissions, and the two most relevant to this thesis, are the Species Survival Commission (SSC) and the World Commission on Protected Areas (WCPA).

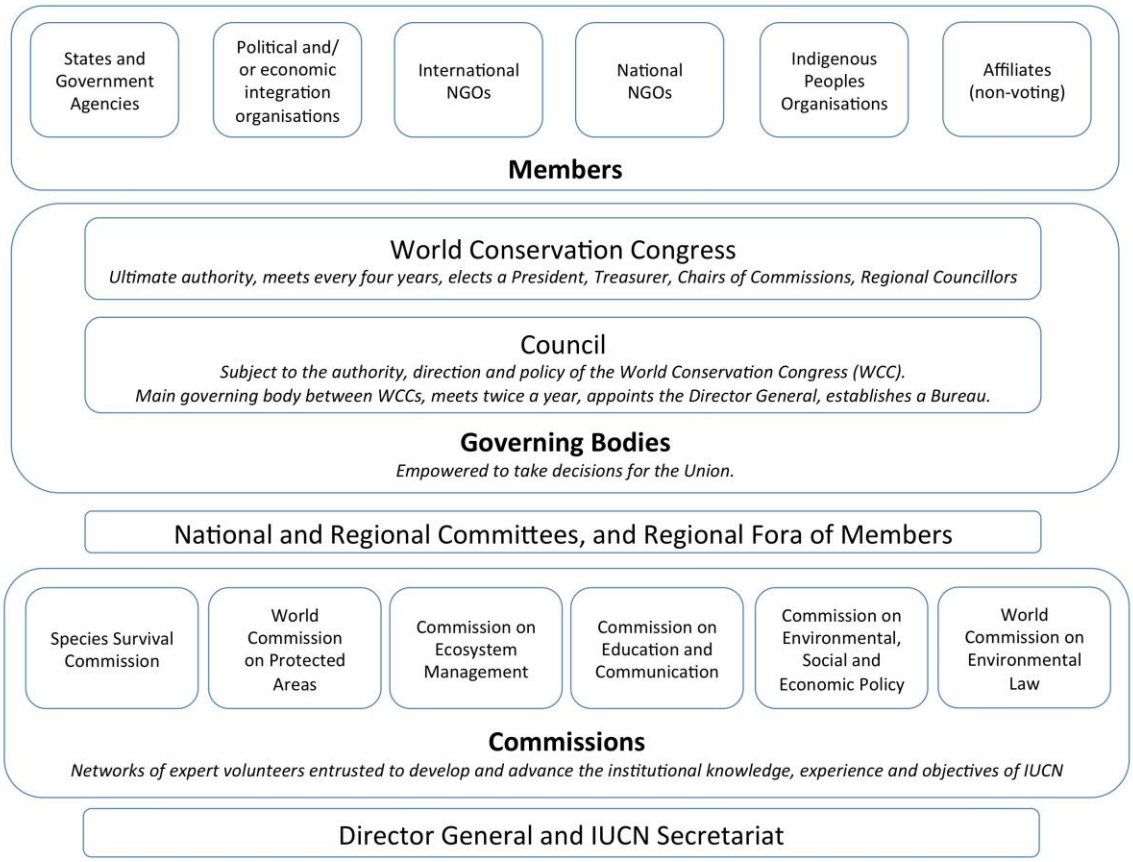


Figure 2.1. IUCN organisational and governance structure.

The IUCN, in collaboration with the Commissions, has developed a set of flagship knowledge products[7] that mobilise data, processes, tools, and products as a global public good towards the conservation and sustainable use of the world's biodiversity (Brooks *et al.*, 2015). The best-known IUCN knowledge product is the

[6] IUCN Programme: provides the framework for planning, implementing, monitoring and evaluation the conservation work undertaken by the Commissions and the Secretariat with and on behalf of IUCN Members.
[7] The term 'flagship knowledge products' was an important component of the IUCN 2013-2016 quadrennial programme; however, they are now trying to move away from this language/terminology.

IUCN Red List of Threatened Species, which assesses risk of species extinction. During the 2004 WCC the IUCN membership negotiated Resolution 3.013 on the uses of the IUCN Red List of Threatened Species and requested that the Species Survival Commission (SCC) work in partnership with IUCN members to:

> *"…**convene a worldwide consultative process to agree a methodology to enable countries to identify Key Biodiversity Areas**, drawing on data from the IUCN Red List of Threatened Species and other datasets, building on existing approaches and paying particular attention to the need to: (i) enlarge the number of taxonomic groups used for site-based priority-setting approaches; (ii) have quantitative, transparent and objective criteria to identify Key Biodiversity Areas; and (iii) report on progress towards achieving this objective at the 4th IUCN World Conservation Congress."*
>
> IUCN (2005: 16 – emphasis added)

This WCC Resolution 3.013 marked the beginning of the global stakeholder engagement process that informed the development of the KBA Standard.

2.4.1 History and evolution of the Key Biodiversity Area approach

The KBA approach draws from and builds upon over 30 years of experience in identifying areas of importance for the different taxonomic, ecological, and thematic subsets of biodiversity (IUCN, 2016a), such as those outlined in **Table 2.1**. The KBA approach was proposed to consolidate processes and knowledge from the previous and existing approaches under a single umbrella methodology (Foster *et al.* 2012). It is difficult to trace the exact time at which, and processes through which, the KBA concept gained wider international recognition; however, the first indication of a growing awareness and diffusion of the concept appears to be a side event during the Convention on Biological Diversity (CBD) Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA9)[8] in 2003 that was hosted

[8] Article 25 of the CBD established SBSTTA as an intergovernmental scientific advisory body to provide the Conference of the Parties (COP) and, as appropriate, its other subsidiary bodies, with advice related to the implementation of the Convention.

by BirdLife International, Conservation International, and Plantlife International. There were also KBA concept workshops held during the IUCN World Parks Congress (WPC) in 2003 and a KBA criteria development workshop, supported by the MacArthur Foundation in 2004 (Eken *et al.* 2004). Eken *et al.* (2004) present an early iteration of the KBA criteria, which were based upon the concepts of irreplaceability and vulnerability[9], and they also proposed provisional KBA thresholds. Langhammer *et al.* (2007) then expanded upon these initial criteria and thresholds, provided additional guidelines on the identification and delineation of KBAs and presented an extensive review of KBA related literature and applications.

In 2007 there was a debate in the KBA literature wherein Knight *et al.* (2007) critiqued the KBA approach, identified five limitations, and suggested three practical modifications and Bennun *et al.* (2007) provided responses to these recommendations to clarify the KBA approach. At the time of this exchange there was no internationally recognised standardised approach for identifying KBAs, as the KBA Standard was still in its inception phase; however, this debate, and others that have taken place throughout the development of the KBA Standard, provided important input that informed the evolution of the KBA approach.

Prior to the development of the current KBA Standard, the previous KBA criteria were refined for the marine realm by Edgar *et al.* (2008) and for the freshwater realm by Holland *et al.* (2012). Langhammer *et al.* (2007) and Foster *et al.* (2012) provide details of KBAs identified based upon previous criteria. Several studies have documented specific KBA identification endeavors from around the globe, including but not limited to: the Caribbean (Anadon-Irizarry *et al.*, 2012), Indo-Burma (Tordoff *et al.*, 2012), Japan (Natori *et al.*, 2012), Macedonia (Melovski *et al.*, 2012), Mediterranean Algeria (Yahi *et al.*, 2012), the Philippines (Ambal *et al.*,

[9] Margules and Pressey (2000) provided a pivotal review of global conservation planning strategies and suggest a conceptual framework for the measure of biodiversity irreplaceability and vulnerability. The spatial rarity of biodiversity features can be measured as irreplaceability and the degree of threat can be measured as vulnerability.

2012), and the Upper Guinea region of West Africa (Kouame *et al.* 2012) (Foster *et al.* 2012)[10]. In order to support the ongoing refinement of the KBA approach and in response to IUCN WCC Resolution 3.3013 an IUCN Task Force was established in 2009.

2.4.2 IUCN Joint Task Force on Biodiversity and Protected Areas

As mentioned above, the two largest IUCN Commissions are the SSC and the WCPA. In 2009 the SSC and the WCPA established an IUCN Task Force to support the global stakeholder engagement process that informed the development of the KBA Standard. **Figure 2.2** depicts the governance structure of the IUCN Task Force.

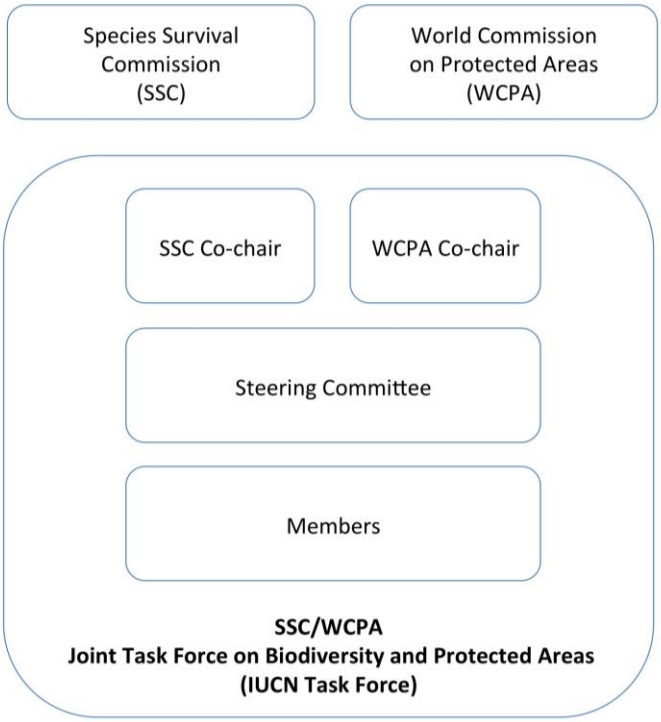


Figure 2.2. Organisational and governance structure of the IUCN Task Force.

[10] Many of these studies can be found in a special issue of the Journal of Threatened Taxa 4(8): 2733–2844.

The IUCN Task Force has convened the global stakeholder engagement process to mobilise input from experts and additional stakeholders, including: IUCN Commissions, IUCN Members, IUCN Secretariat, conservation organisations, civil society, academia, governments, donors, and the private sector. One of the goals of the IUCN Task Force was to strengthen the interface between conservation science, policy, and practice (Brooks and Matiku, 2011). The aim of the engagement process convened by the IUCN Task Force was to consolidate a standardised methodology for identifying KBAs.

2.4.3 The global stakeholder engagement process

There were four main components of the global stakeholder engagement process, including: (i) technical workshops with subject experts; (ii) an end-user engagement process; (iii) regional events with additional stakeholders; and (iv) an online consultation on the draft KBA Standard methodology (**Figure 2.3**).

Figure 2.3. The four main components of the global stakeholder engagement process.

There were also countless additional informal, bilateral, and/or ad-hoc discussions, meetings, and thematic working groups that informed the evolution of the KBA approach over the years; however, the four main components depicted in **Figure 2.3** comprise the processes officially convened by the IUCN Task Force to elicit input from a broad range of global stakeholders towards the development of the KBA Standard. **Figure 2.4** outlines a detailed timeline of the main milestones, processes, and events involved in the global stakeholder engagement process.

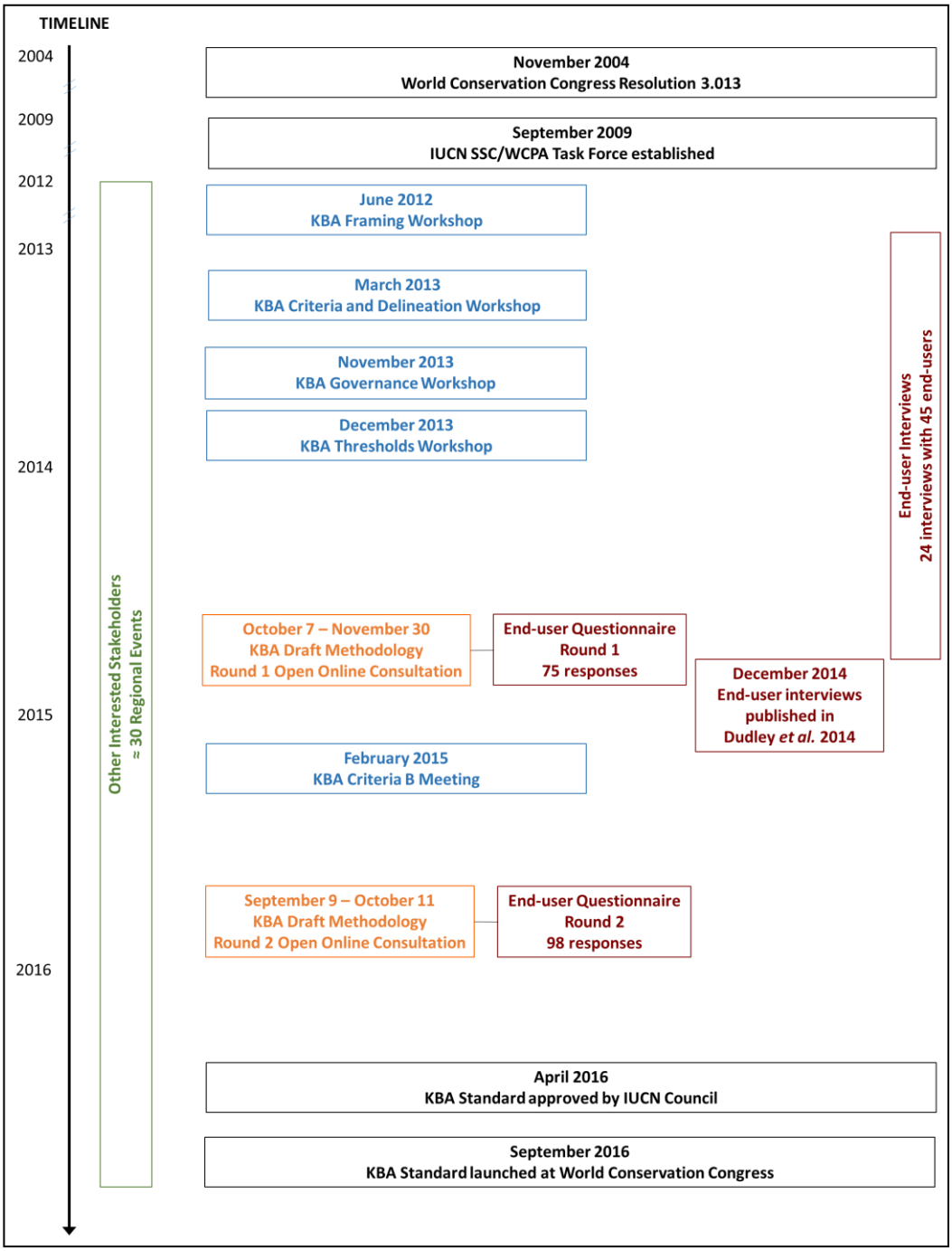


Figure 2.4. Global stakeholder engagement process timeline (as in Figure 2.3, blue = technical workshop, red = end-user engagement, green = regional event, orange = online consultation, black = other milestone).

The Technical Workshops all produced associated workshop reports that are available in the public domain: KBA framing workshop (IUCN, 2012b), KBA Criteria and Delineation Workshop (IUCN, 2013), KBA Governance Workshop (IUCN, 2014c), addendum to the Governance Workshop Report (IUCN, 2014a), and KBA Thresholds Workshop (IUCN, 2014b). The end-user engagement process involved interviews that are compiled in Dudley *et al.* (2014) and an end-user questionnaire. Some end-users also participated in the Technical Workshops; however, this was often in the capacity of an expert rather than as an end-user. Many of the over 30 regional events with additional stakeholders are documented in IUCN (2012a) and those either not documented in the report or that have taken place since then are listed in **Appendix 2-A**, along with all components of the global stakeholder engagement process. Regional Events were often targeted towards end-users, as outlined in **Appendix 2-A**. The comments received during both rounds of the online consultation process (1127 comments in the first round from 160 individuals/organisations, 615 comments in the second round from 130 individuals/organisations), as well as the IUCN Task Force responses to each comment, have also been made publicly available through the KBA website. This comprehensive engagement process has taken over four years and the IUCN Task Force stated that "*this is the most consultative process that the IUCN has ever undertaken*" at the launch of the KBA Standard during the 2016 WCC. During the first technical workshop, the Framing Workshop in 2012, participants developed a vision, mission, and purpose for KBAs and stated that:

> "*The aim of the current IUCN-convened process is to develop a new globally agreed standard that draws and builds on existing approaches in a way that best advances the biodiversity conservation agenda, while* ***responding to end-users needs*** *for a scientifically rigorous yet pragmatic methodology for practitioners*."
>
> IUCN (2012b: 2 – emphasis added)

It is this notion of responding to end-user needs (and the resulting end-user engagement process that was used to improve understanding of what end-users

needs and concerns were) that is the focus of this thesis. There was an end-user breakout group during the 2012 Framing Workshop that developed a definition of end-users. They distinguished between primary and secondary end-users and between global/regional and national/sub-national end-users:

> *"End-users: Importantly, a diverse range of end-users at different scales, rather than a single audience, was identified for the standard:*
> *a. Primary: those who lead or influence decision-making processes linked to mechanisms that secure biodiversity or that avoid biodiversity loss*
> *i. Global and regional end-users, including those who need to comply with intergovernmental treaties (e.g., Target 11 of the CBD's strategic plan), agencies, and coalitions; multilateral development banks; donors; multinational companies and industry associations; international conservation and development NGOs; global assessment processes and researchers.*
> *ii. National and sub-national end-users, including national government conservation agencies, agencies managing living resources, and other agencies; industry and industry associations; investors; cultural and spiritual institutions; NGOs; and local and indigenous communities.*
> *b. Secondary: those who use information, such as maps or site lists, for additional purposes including research and communication. Secondary end-users may not be decision-makers but the new approach will provide solutions to achieve their biodiversity assessment or conservation planning goals."*
>
> IUCN (2012b: 3)

These end-user definitions and a typology of end-users (also developed by the breakout group) led to the initiation of an end-user engagement process. The understanding of end-users' needs and concerns gained through this process informed the development of the KBA Standard. The details of the purpose, process, outputs, and outcomes of engaging end-users are investigated in this thesis.

2.4.4 A new IUCN knowledge product: the KBA Standard

As mentioned above, the IUCN has developed a set of flagship knowledge products. The KBA Standard (IUCN, 2016a), which has resulted from years of discussions,

negotiations, and iterations with stakeholders, is now one of the newest IUCN knowledge products. The KBA Standard draws and builds upon existing identification approaches and seeks to inform policy designations (**Figure 2.5**).

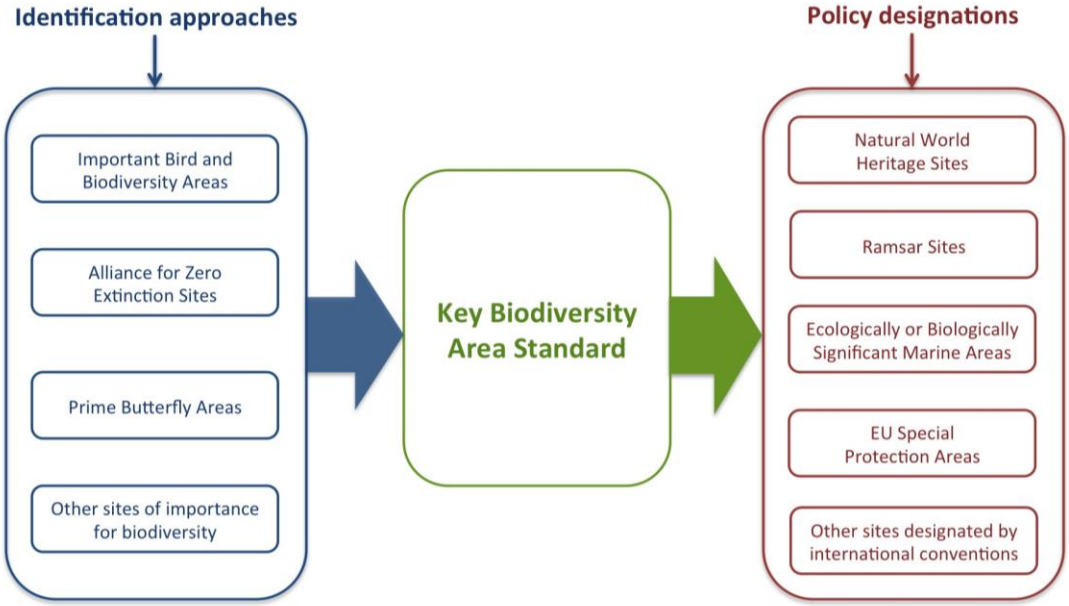


Figure 2.5. Relationship between KBAs and existing identification approaches and sites designated by international conventions (adapted from IUCN, 2015: 28)).

KBAs are defined as sites that contribute significantly to the global persistence of biodiversity (IUCN, 2016a: 1), a definition that was carefully negotiated during the Framing Workshop (IUCN, 2012b), which was a seminal moment in the clarification of the current iteration of the KBA approach (see **Appendix 2-B** for a definition of the terms used in this definition of KBAs). The aims of the KBA Standard are to:

- *"Harmonise existing approaches to the identification of important sites for biodiversity;*
- *Support the identification of important sites for elements of biodiversity not considered in existing approaches;*
- *Provide a system that can be applied consistently and in a repeatable manner by different users and institutions in different places and over time;*
- *Ensure that KBA identification is objective, transparent and rigorous through application of quantitative thresholds;*
- *Provide decision-makers with an improved understanding of why particular sites are important for biodiversity."*

IUCN (2016a: 2)

The criteria and thresholds that are used to identify KBAs are outlined in IUCN (2016) and a summary of them can be found in **Appendix 2-C**. They include five different criteria that can be used to identify sites that contribute significantly to the global persistence of: (A) threatened biodiversity; (B) geographically restricted biodiversity; (C) ecological integrity; (D) biological processes; and (E) irreplaceability through quantitative analysis. Global quantitative thresholds have been developed for each of the criteria and have undergone extensive testing. Further details on the use of the KBA criteria and thresholds for the identification and delineation of KBAs can be found in IUCN (2016).

2.4.5 Links to global, regional, and national policies and processes

There are several different global, regional, and national policies and processes that the IUCN knowledge products seek to inform and support (Brooks *et al.* 2015) and that relate to the transfer and exchange of knowledge from science to policy to practice. The KBA Standard relates specifically to the:

- Aichi Biodiversity Targets of the 2011–2020 Strategic Plan for Biodiversity, especially Target 11, but also 2, 4, 12, 14, and 20;
- Sustainable Development Goals (SDGs) Targets, especially 14.5, 15.1, and 15.4;
- National Biodiversity Action Plans and Strategies (NBSAPs) prepared for the Convention on Biological Diversity;
- Science-policy interfaces such as the United Nations Environment Programme's Global Environment Outlook (GEO) and the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) regional assessments (Brooks *et al.* 2016); and
- Intergovernmental mandates for expansion of protected area networks as outlined in Langhammer *et al.* (2007: 2-3).

Table 2.2 provides an overview of the relationship between the KBA Standard and these global, regional, and national policies and processes.

Table 2.2. Links between KBAs and global, regional, and national policies and processes.

Policy/Process	Relationship/use
CBD Aichi Targets (2010)	
Target 2	
By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	*"Mapping potentially sensitive areas that need to be considered in and integrated with development strategies and planning processes."* CBD (2013: 3)
Target 4	
By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.	*"Supporting private and financial sectors to manage their environmental risks related to biodiversity impact (e.g. IFC, 2012 paragraph 16)"* CBD (2013: 3)
Target 11	
By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	*"Generic Indicator: trends in areas of particular importance for biodiversity conserved. Specific Operational Indicator: protected area coverage of Key Biodiversity Areas (including Important Bird and Biodiversity Areas, Alliance for Zero Extinction sites)."* CBD (2013: 13) *"Gap analysis of Protected Area networks, and informing the selection of sites for protection under national and also international legislation (e.g. World Heritage Natural sites, Ramsar sites, Natura 2000 sites in Europe). Describing the CBD's Ecologically or Biologically Significant Marine Areas (EBSAs). Monitoring progress towards global and national biodiversity targets."* CBD (2013: 3-4)
Target 12	
By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.	*"Taking steps to prevent the extinction of known threatened species and improve their conservation status. In particular, conservation of Alliance for Zero Extinction sites – which hold the only populations of highly threatened species."* CBD (2013: 4)
Target 14	
By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.	*"Restoring and safeguarding ecosystems providing essential services – since KBAs have been shown to be particularly important for providing ecological services to people, as well as for biodiversity."* - CBD (2013: 4)

Policy/Process	Relationship/use
Target 20 By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.	*"Guiding and catalysing conservation investments by donors, e.g. the Critical Ecosystem Partnership Fund uses KBAs to direct their funding efforts".* CBD (2013: 4)
CBD National Biodiversity Action Plans and Strategies (NBSAPS) *"IUCN encourages Parties to integrate existing information on Key Biodiversity Areas into their National Biodiversity Action Plans and Strategies (NBSAPS)"* – CBD (2013: 5).	
UN Sustainable Development Goals (SDG, 2016) **Goal 14**	
Conserve and sustainably use the oceans, seas and marine resources for sustainable development 14.5: By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information.	**14.5.1** Coverage of protected areas in relation to marine areas.
Goal 15	
Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss. **15.1**: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.	**15.1.1** Forest area as a proportion of total land area. **15.1.2** Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type.
15.4: By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development.	**15.4.1** Coverage by protected areas of important sites for mountain biodiversity.
Global Environment Outlook (GEO) and UN International Platform on Biodiversity and Ecosystem Services (IPBES) Regional environmental assessments: KBA data "*will inform the regional/subregional assessment chapters on the status of biodiversity, drivers of its decline, and institutional responses, and greatly facilitate comparability and consistency between the different regional/ subregional assessments."* (Brooks *et al.* 2016: 1)	

The global stakeholder engagement approaches used in the development of the KBA Standard also correspond well to the Aarhus Convention[11], SDG Goals 16[12], and 17[13] and a general global trend towards increasingly participatory and deliberative decision-making and democracy (Escobar, 2013).

2.5 Summary

This context-setting chapter has acknowledged some of the different values and approaches used within the conservation movement. It has outlined the history and evolution of the KBA approach and the associated global stakeholder engagement process that informed the development of the KBA Standard in its current iteration. The next chapter explores the research concepts that relate to the research undertaken in this thesis, including the concepts and theories that relate to knowledge production, transfer, exchange, and use, and the role of stakeholder engagement within these processes. Over the past few decades there has been an increasing call for stakeholder engagement in decision-making and for the use of knowledge transfer, exchange, and stakeholder engagement activities in a variety of contexts (such as policy, business, and research) and at different scales (including local, national, and international). This thesis explores the use of an end-user engagement process as a form of knowledge transfer and exchange in the context of global biodiversity conservation.

[11] European Commission Aarhus Convention on access to information, public participation in decision-making and access to justice in environmental matters (UNECE, 1998).
[12] SDG Goal 16 - Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels. Target 16.8: Broaden and strengthen the participation of developing countries in the institutions of global governance.
[13] Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development. Target 17.16: Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries.

3 Research Concepts

Preamble

This chapter reviews the concepts and theories that emerged over the course of the research design, implementation, and analysis phases of this thesis. I introduce them here to frame the global stakeholder engagement process involved in the development of the KBA Standard and the end-user engagement component in particular. These concepts and theories provide a framework within which I embed my empirical findings. I review the concepts of knowledge production, transfer, exchange, and use, and the role of stakeholder engagement within these, to later highlight how these concepts relate to the development of the KBA Standard. I also introduce methods to evaluate the engagement purpose, process, outputs, and outcomes to reflect upon engaging end-users towards learning and improving future practice. The concepts, theories, and frameworks reviewed in this chapter reflect my interpretation and judgement about what is relevant to my experience of using a mixed methods action research approach to work *with* the IUCN Task Force *on* the end-user engagement process *for* the development of the KBA Standard. They do not necessarily represent concepts, theories, or frameworks currently used within the IUCN Task Force or the IUCN more broadly. In many ways, however, the concepts, theories, frameworks, and terms reviewed in this chapter relate closely to the work that IUCN has convened and facilitated between a diversity of disciplines, sectors, and regions for over 60 years. As discussed in the previous chapter, IUCN is a complex network that produces knowledge products through knowledge transfer, knowledge exchange, and stakeholder engagement processes with its members and beyond, to inform policy and practice. This review is intended to provide a combination of concepts, theories, and frameworks that offer a particular lens through which to view the analysis of the purpose, process, outputs, and outcomes of engaging end-users undertaken in this thesis.

3.1 Engaging users in knowledge production

Stakeholder engagement is increasingly being used to bridge science, policy, and practice towards tackling complex systemic environmental challenges (van den Hove, 2007). The transfer and exchange of knowledge that occurs through various forms of stakeholder engagement requires an understanding of how knowledge is produced and used. Combining knowledge through transdisciplinary processes, projects, and research has been proposed as one way to integrate diverse sources of knowledge to inform decision-making (Tress *et al.* 2005; Pruitt and Waddell, 2005).

The relationship between the producers of knowledge, the users of knowledge, and society in general has long been a source of debate (Rich, 1979; Lubchenko, 1998). Although so called 'blue skies' research is important for pushing the boundaries of knowledge, there has been a growing call for more applied, user-oriented, and impactful science and research (Shove and Rip, 2000). In response to this call, there are increasing levels of engagement with stakeholders and this is associated with a transformation in the way that knowledge producers, users, and additional stakeholders interact (Contandriopoulos *et al.* 2010). Developing solutions to address the complex systemic environmental, social, and economic challenges facing humanity (such as the rapid loss of biodiversity), requires a multitude of approaches including the profound and detailed exchange of knowledge and understanding between scientists, policy makers, practitioners, and the wider public (Jolibert and Wesselink, 2012). This integration of multiple perspectives and different sources of knowledge into research, policy, and practice recognises the need to understand who is affected by, and who can influence, decision-making and action in each of these contexts (Jacobs *et al.* 2005; Reed *et al.* 2009). The development of the KBA Standard is one example of a global transdisciplinary process that recognised the need to incorporate plural perspectives and integrate diverse sources of knowledge to develop a knowledge product that responds to

end-users' needs for a scientifically rigorous yet pragmatic methodology (IUCN, 2012b). This chapter explores the theories, concepts, and frameworks that relate to an integrated view of knowledge production, transfer, exchange, and use and the role stakeholder engagement can play within these processes.

Understanding has evolved from viewing 'knowledge as a thing' that can be passed in a linear way from one person to another towards viewing 'knowledge as a process' that is contextual and changeable (Reed *et al.* 2014). This distinction between a linear model of how knowledge changes hands towards a networked view of knowledge production processes that moves knowledge towards action is reviewed in Graham *et al.* (2006) and Fazey *et al.* (2013). Thompson *et al.* (2006) note that the inconsistency in the terms and definitions used both within and between disciplines creates difficulties and unforeseen implications. It is therefore important to clarify how terms are referred to within a given project, policy, or research context. A detailed discussion and overview of how knowledge is conceptualised, constructed, debated, defined, and how this influences how it is exchanged, is presented by Evely *et al.* (2012). **Table 3.1** provides a list of the main concepts and terms reviewed in this chapter and the way in which I have defined and interpreted them for the purposes of this thesis. Fazey *et al.* (2013) point out that a single term or definition is unlikely to capture the complexity of each of these concepts; therefore, explicitly defining how each term is used in a specific process or project helps to clarify meaning and build understanding of how the concepts are applied in a given context (Tress *et al.*, 2005).

Table 3.1. Main concepts, terms, definitions, and synonyms.

Concept or term	Definition used in this thesis	Synonyms or related terms used elsewhere
Knowledge production	The process of creating new knowledge.	Knowledge generation Knowledge creation Knowledge-making Knowledge mobilisation Knowledge synthesis
Knowledge use	The act of applying knowledge to decision-making and action.	Knowledge utilisation Knowledge uptake Knowledge application Knowledge diffusion Knowledge implementation
Knowledge transfer	Linear one-way movement of knowledge. Viewing *knowledge as a thing* transferred from producer to user.	Knowledge acquisition
Knowledge exchange	Non-linear two-way movement of knowledge. Viewing *knowledge as a process* that is exchanged between producers and users.	Knowledge co-generation Knowledge co-production Knowledge sharing
Stakeholder engagement	Involvement of stakeholders in a knowledge production process through the use of knowledge transfer and/or knowledge exchange.	Participation Consultation Communication

3.1.1 Reviewing the concepts of knowledge production and use

Philosophers have long pondered the relationship between knowledge production and knowledge use (Rich, 1979; Contandriopoulos *et al.* 2010). This section reviews these concepts and outlines their relevance to the end-user engagement process investigated in this thesis.

3.1.1.1 Knowledge production

Theories about the way that knowledge is produced (or is conventionally thought to be produced) have changed considerably over the centuries. One distinction that has been made in the way knowledge is produced, proposed by Gibbons *et al.*

(1994) and later updated by Nowotny *et al.* (2003), differentiates between 'Mode 1' and 'Mode 2' knowledge production. 'Mode 1' knowledge production is characterised by a paradigm of scientific discovery, disciplinary focus, and the autonomy of scientists and their institutions (Nowotny *et al.*, 2003). 'Mode 2' knowledge production is said to operate through application-oriented transdisciplinary collaborations, involving heterogeneous practices and principles, increased reflexivity, and social accountability (Hessels and van Lente, 2008). This distinction was proposed to account for varying discourses related to science, policy, and practice and the politics of knowledge, including: (i) the potential for the steering of knowledge production priorities; (ii) the observation of a trend towards the commercialisation of knowledge; and (iii) the need for increased accountability of science (Nowotny *et al.* 2003). **Table 3.2** provides a summary of the differences between 'Mode 1' and 'Mode 2' knowledge production.

Table 3.2. Differentiating between characteristics of 'Mode 1' and 'Mode 2' knowledge production (based upon Gibbons *et al.* (1994) and Hessels and van Lente (2008)).

Mode 1	Mode 2
Academic context	Application and implication context
Disciplinary	Transdisciplinary
Homogeneity	Heterogeneity
Autonomy from social interests and goals	Reflexivity and social accountability

The concept of 'Mode 2' knowledge production is not without its critics. Some have interpreted the concept as a threat to universal or objective truth and experimental research, others as the subordination of research to market and political agendas (Ziman, 1996). David (1996) argues that 'Mode 2' offers a postmodern vision of research. Nowotny *et al.* (2003) capture this by stating that:

> *"Those with most to lose were most sceptical – including researchers in established disciplines and institutions, who feared that the quality of science would be eroded if such levelling ideas gained political currency, and who feared that their own autonomy would be imperiled if more explicit links were established between research and innovation."*
>
> p. 179

In the context of this thesis, both 'Mode 1' and 'Mode 2' forms of knowledge production offer a way to conceptualise both the technical scientific elements and the pragmatic, applied, and user-oriented approaches used to develop the KBA Standard.

Another related theory referred to as post-normal science, developed by Funtowicz and Ravetz (1993), is also relevant to the stakeholder engagement approaches used to inform the development of the KBA Standard. Post-normal science implies that to ensure the quality of scientific information being used in policy processes, an extended peer community is required. This extension of the peer community contributes additional perspectives, scrutiny, and legitimacy (beyond traditional scientific results and expertise) that can be incorporated into decision-making processes. Post-normal science resembles 'Mode 2' knowledge production in that both concepts recognise the value of incorporating plural perspectives. It has been argued that non-experts lack sufficient theoretical knowledge and are potentially biased by self-interest; however, it has also been argued that experts can also lack practical knowledge and have their own forms of (often unacknowledged) bias (Funtowicz and Ravetz, 1993). The issues that are particularly well suited to post-normal science have uncertain facts, disputed values, high stakes, and require urgent decisions. **Table 3.3** provides a brief comparison between traditional science and post-normal science.

Table 3.3. Characteristics of traditional science in relation to post-normal science.

Traditional Science	Post-normal Science
Certain facts	Uncertain facts
Value neutrality	High decision stakes and disputed values
Motivated by curiosity	Motivated by issue/problem
Disciplinary expert community	Extended peer community

Funtowicz and Ravetz (1993) advocate the value of consolidating different forms of knowledge to meet the challenges posed by complex global environmental

problems. They state that only through a dialogue involving all stakeholders, where scientific expertise forms only one piece of the puzzle alongside local and global concerns and voices, can we obtain implementable and enforceable solutions to environmental, social, and economic challenges. Conservation has been described as post-normal due to the fact the loss of biodiversity: (i) requires urgent action; (ii) is characterised by uncertainty; and (iii) involves an extended peer community with varying skills, perceptions, and values (Francis and Goodman, 2010). For the purposes of this thesis, post-normal science offers a useful concept through which to view the end-user engagement process.

Many of the diverse concepts and theories used to explain the way knowledge is produced, including post-normal science, are systematically reviewed and compared to 'Mode 2' knowledge production in Hessels and van Lente (2008). Authors exploring these approaches tend to argue that the relationship between science and society has undergone, and continues to undergo, considerable change (Bohme *et al.* 1983; Edquist, 1997; Slaughter and Leslie, 1997; Etzkowitz and Leydesdorff, 2000; Klein *et al.*, 2004; Bammer, 2005; Blackstock *et al.* 2007; Eigenbrode *et al.* 2007). Knowledge production often involves collective action that crosses disciplinary boundaries and includes the perspectives of multiple stakeholders (Klein, 2004; Lele and Norgaard, 2005) and there is a growing recognition of the value of combining diverse forms of knowledge to develop innovative, relevant, valid, and practical solutions to environmental challenges and environmental change (Raymond *et al.* 2010; Fazey *et al.* 2014). These concepts and theories relate well to IUCN's governance approach and to the end-user engagement process undertaken by the IUCN Task Force and myself (in the role of an action researcher) in this thesis.

3.1.1.2 Knowledge use

One of the main areas of change in the production of knowledge is the growing emphasis on the usefulness or users of knowledge (Shove and Rip, 2000; Reed *et al.* 2014). The concept of the use of knowledge relates to its application to specific decision-making contexts and challenges (Weiss, 1979). One way to consider knowledge use is by differentiating between types of use and the resulting ways that these influence policy and practice, including: instrumental use, conceptual use, and symbolic use (Weiss, 1979; Beyer and Trice, 1982; Neilson, 2001; Lavis *et al.* 2003a; Contandriopoulos *et al.* 2010; Rudd, 2011) (**Table 3.4**).

Table 3.4. Definitions of instrumental use, conceptual use, and symbolic use.

Types of use	Definitions
Instrumental use	Acting on research knowledge in specific and direct ways to solve a particular problem (Beyer and Trice, 1982).
Conceptual use	A more general and indirect form of learning based upon the use of knowledge to introduce new issues to policy or practice discourse (Lavis *et al.* 2003).
Symbolic use (also referred to as political or tactical use)	Using the research knowledge to legitimate a predetermined position or action (Contandriopoulos *et al.* 2010); or conversely using lack of research or inconclusive results to justify inaction.

Contandriopoulos *et al.* (2010) suggest that these distinctions in the types of use (particularly between conceptual and symbolic) are difficult to measure empirically and are therefore challenging practically; however, an awareness and understanding of these differences is useful because it helps to consider *how* knowledge is used, not just *if* knowledge has been used (Lavis *et al.* 2003a). The different ways and contexts in which knowledge related to KBAs might be used were considered during the Framing Workshop (IUCN, 2012b), the outcomes of which acted as drivers for the end-user engagement process examined through this thesis.

Contandriopoulos *et al.* (2010) found dozens of definitions of knowledge use during their review and stated that although the definitions are quite diverse they all suggest that to produce relevant, meaningful, usable knowledge it needs to be embedded in policy and practice. Their review also indicated that knowledge use is influenced by users perceptions of its relevance, legitimacy, and accessibility (Contandriopoulos *et al.* 2010). The growing expectation and challenge for knowledge producers is to develop user-inspired and user-meaningful outcomes that integrate diverse sources of knowledge (Raymond *et al.* 2010). It is this notion of producing knowledge that responds to end-users' needs (or that is user-inspired) that motivated the end-user engagement process that is examined in this thesis.

3.1.2 Differentiating between knowledge transfer and knowledge exchange

Two terms that have been used to describe the role of users in the production and use of knowledge are knowledge transfer and knowledge exchange. These terms are sometimes used interchangeably; however, they are quite distinct. This section describes them and how they relate to the end-user engagement process that informed the development of the KBA Standard.

3.1.2.1 Knowledge transfer

The concept of knowledge transfer is related to linear models of knowledge production and knowledge use (Davies *et al.* 2008; Phillipson and Liddon, 2007) whereby knowledge is perceived as being portable, complete, and transferrable (Fazey *et al.* 2013; Jolibert and Wesselink, 2012). Knowledge transfer is associated with a one-way process (typically from knowledge producers to knowledge users) that informs action. There are contexts in which one-way knowledge transfer is the most appropriate model to use, such as in the transfer of technology (Reed *et al.*

2013); however, Davies *et al.* (2008) warn that using simplistic notions and restrictive assumptions of knowledge transfer can be problematic. Davies *et al.* (2008) recommend that reflexive approaches (that involve more interaction and dialogue with multiple and diverse sources of knowledge) can help with raising awareness that knowledge is partial, contingent, and provisional. This can help with acknowledging uncertainties and complexities and the contextual and nuanced nature of how knowledge is produced and used.

In the context of the development of the KBA Standard, knowledge transfer played a role in terms of informing stakeholders (including end-users) about the development of the KBA Standard and consulting them through the different components of the engagement process. For example, updates and consultation requests provided via the IUCN Task Force website, newsletters, regional events, and the online consultation. However, in some contexts a more interactive form of two-way knowledge exchange was needed. An example of this is the engagement of stakeholders (subject experts and end-users) in the technical workshops.

3.1.2.2 Knowledge exchange

The concept of knowledge exchange is associated with a two-way iterative exchange of knowledge between producers and users whereby diverse sources and forms of knowledge and expertise are valued (Phillipson and Liddon, 2007; Reed *et al.* 2013). This resonates with the concepts of 'Mode 2' knowledge production and post-normal science discussed above. Knowledge exchange has been used and explored in a diverse range of disciplines and contexts (Fazey *et al.* 2013), and there is growing recognition that simply producing knowledge does not ensure that it will be effectively or appropriately used. One way to encourage more effective use of knowledge is to promote increased knowledge exchange between knowledge producers and users to inform policy and practice (Reed *et al.* 2014). Indeed,

others have commented on the increasing recognition of the need for multi-actor and multi-institutional collaboration and knowledge integration processes (Raymond *et al.* 2010; Evely *et al.*, 2011).

When both knowledge producers and users participate in and value knowledge exchange, a collaborative approach to knowledge production can take place in a way that relies upon combining users' expertise (in the context of decision-making and implementation) with producers' expertise (in the context of access to and contribution of reliable knowledge) (Contandriopoulos *et al.* 2010). The exchange of knowledge and ideas is a complex and dynamic process that is influenced by many factors, including: objectives, agendas, experiences, values, perceptions, worldviews, power, politics, culture, society, and context (Evely *et al.* 2011; Fazey *et al.* 2013; Reed *et al.* 2013). Therefore, care must be taken to remain aware of the inherent challenges related to knowledge exchange processes. To assist with this, Reed *et al.* (2014) identified five principles for the practice of knowledge exchange (**Table 3.5**).

Table 3.5. Five principles for the practice of knowledge exchange (based on Reed *et al.* 2014).

Principles	Description
Principle 1: Design	Know what you want to achieve with your knowledge exchange (goals) and design a flexible knowledge exchange strategy that can respond to changing user needs and priorities.
Principle 2: Represent	Systematically identify your likely users, represent and embed their knowledge needs and priorities into your research and consider ethical implications of engaging with different stakeholders.
Principle 3: Engage	Build long-term trusting relationships based on two-way dialogue with users, understand what motivates users, work with them to produce new knowledge and interpret the implications of your joint efforts for policy and practice.
Principle 4: Impact	Focus on delivering tangible results to as many users as possible and as early as possible.
Principle 5: Reflect and Sustain	Monitor and reflect on your knowledge exchange work and its effectiveness regularly, use this to learn from and refine your knowledge exchange practice, share good practice and consider how to sustain a legacy of knowledge exchange beyond project funding.

These principles provide a useful framework against which to evaluate the purpose, process, outputs, and outcomes of engaging end-users, and they provide a useful way to cross-reference the recommendations developed through the summative evaluation undertaken in this thesis.

Contandriopoulos *et al.* (2010) state that the distinction and boundaries between knowledge producers and users can be fluid and permeable, where the production and use of knowledge is iterative, networked, adaptive, innovative, and dependent upon the exchange of different forms of expertise and knowledge (Phillipson *et al.* 2012). For example, knowledge producers can become knowledge users and vice-versa (Phillipson and Liddon, 2006; Evely *et al.* 2012). This is contrary to the assumption that producers and users are two separate groups with differing perspectives, languages, and values where neither group understands the other (sometimes referred to as the 'two-communities theory') (Caplan, 1979; Graham *et al.* 2006).

Knowledge transfer is often associated with a producer-push of knowledge (Davies *et al.* 2008; Mitton *et al.* 2007); however, some propose that one-way linear knowledge transfer can also take place from the perspective of user-pull when users seek specific knowledge, expertise, and resources to inform their decision-making context (Lavis *et al.* 2003b; Reed *et al.* 2013). Lavis (2003a) suggests a more applied approach that employs the use of knowledge exchange that includes both producer-push and user-pull motivations to ask and respond to decision-relevant questions. This combination of producer-push and user-pull motivations links well to the reality of the relationship that exists between the IUCN Task Force (as knowledge producers) and the end-users that they engaged. **Table 3.6** summarises this distinction.

Table 3.6. Distinguishing between producer-push and user-pull (based upon Lavis *et al.* 2003b).

Producer-push	**User-pull**
Producers' active efforts to make knowledge available to users.	Users' active efforts to identify knowledge and expertise to inform decision-making context.
Encouraging users' awareness of the research.	Users' awareness of a particular research organisation's expertise and their on-going use of the organisation as an information resource to support their decision-making
Influence on decision-making.	Use of the knowledge producer as a resource to support decision-making.
Often one-off efforts.	Creates cultural shifts and facilitates on-going use of research knowledge to inform decision-making.
Applied research and knowledge exchange	
Includes both producer-push and user-pull: equates to active efforts by both producers and users to ask and answer more decision-relevant questions (for example: producers involving users in the knowledge production agenda-setting processes and users involving producers as advisors to their decision-making processes).	

Despite the progress that has been made in developing and clarifying the main things to consider when designing and implementing knowledge transfer and exchange activities, certain aspects of knowledge exchange remain complex, contextual, dynamic, and poorly understood due to uncertainty about what is effective when and why (Fazey *et al.* 2013). Many knowledge exchange efforts are designed and implemented in an ad-hoc way without being rooted in theoretical, methodological, or empirical understanding and without any plans for systematic evaluation (Reed *et al.* 2014). Furthermore, the resources (human, financial, and time) involved in designing and implementing meaningful knowledge exchange are often underestimated.

This thesis focuses upon the context of knowledge production and use associated with the development of the KBA Standard. This context involves knowledge transfer and knowledge exchange through engagement with end-users using a mixed methods action research approach, as described in **Chapter 4**. The next section reviews concepts related to the role of stakeholder engagement in knowledge transfer and exchange and associated rationales, typologies, methods, and evaluation approaches.

3.2 Stakeholder engagement: rationales, typologies, methods, and evaluation

In the context of this thesis, stakeholders are understood to be individuals, groups, or organisations that are affected by or can affect a decision either directly or indirectly (Freeman, 1984; Reed, 2008). Engagement refers to the spectrum of different methods used for communication, consultation, and participation with stakeholders (based upon a typology of engagement developed by Rowe and Frewer (2005)). This section offers a review of the rationales, typologies, methods, and evaluation approaches often used in stakeholder engagement and explores the ways in which they relate to the concepts and approaches used in the knowledge production, transfer, exchange, and use associated with the development of the KBA Standard. Stakeholder engagement is perceived as bringing significant benefits to the process of knowledge production (Phillipson *et al.* 2012) and is closely related to understanding how knowledge is exchanged and used (Fazey *et al.* 2013). **Figure 3.1** provides an overview of the concepts reviewed in this section, which also form the basis for the structure of, and analysis undertaken, in this thesis. The overview relates to the knowledge exchange principles presented in **Table 3.5** above, particularly in terms of the sequential consideration of the purpose, process, outputs, and desired outcomes of engaging stakeholders.

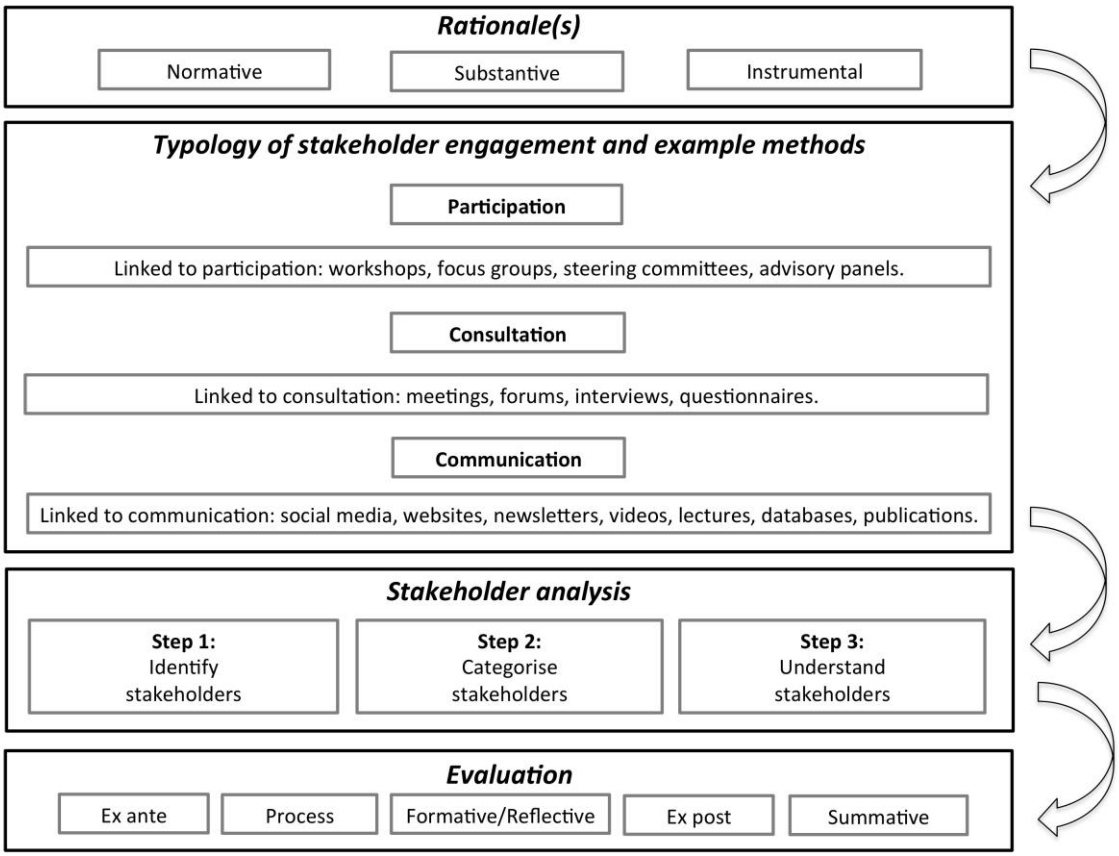


Figure 3.1. Overview of the stakeholder engagement rationales, typology, analyses, methods, and evaluation approaches used in this thesis (arrows represent decision points; however, a blend of multiple rationales, levels of engagement, forms of analysis and types of evaluation can be used in any given engagement process) (figure adapted from Reed *et al.* 2009: 1936).

3.2.1 Rationales for stakeholder engagement

A first step in the design of stakeholder engagement processes should involve consideration of the purpose of the engagement. Several studies have suggested different rationales for engaging stakeholders. Fiorino (1989) proposed a distinction between the different rationales for involving multiple stakeholders in decision-making processes. This distinction involves normative, substantive, and instrumental considerations (Stirling, 2006). A helpful way to consider these different rationales, proposed by Stirling (2006), is to use a 'means to an end' type analogy (**Table 3.7**).

Table 3.7. Different rationales for stakeholder engagement.

Rationale	Explanation
Normative	Normative considerations relate to the democratic right of stakeholders to participate in decision-making processes as an end in itself. A focus on equality, empowerment, and social learning is a characteristic feature of this type of motivation (Stirling, 2006; Blackstock *et al.* 2007; Reed, 2008).
Substantive	Substantive (or pragmatic) considerations focus on increasing the depth and breadth of information that informs decision-making in order to enhance decision quality as a means to an end (Beierle, 2002; Stirling, 2006; Blackstock *et al.* 2007). This is in an effort to include diverse, extensive, and context specific knowledge as well as to account for divergent values and interests.
Instrumental	Instrumental considerations refer to the need to restore trust and credibility, also as a means to an end (Stirling, 2006). This is related to justifying decision-making, assisting with implementation and defusing conflict (Stirling, 2006; Blackstock *et al.* 2007).

Stakeholder engagement efforts are often motivated or justified using either one or a combination of these rationales. Clearly framing the rationale(s) for engaging stakeholders is an important early step as it helps to define and communicate the purpose and objectives of the process. The rationales used for engaging end-users in the development of the KBA Standard are considered in **Chapter 5** of this thesis.

3.2.2 Typologies of stakeholder engagement

Typologies of engagement provide a way to conceptualise and categorise different approaches and can help researchers and practitioners to consider 'what works best when' during the design, implementation, and evaluation phases of engagement processes (Rowe and Frewer, 2004; Reed, 2008). A multitude engagement typologies have been proposed as a result of different interpretations and conceptualisations and also due to the fact that different approaches are useful for different purposes, resources, stakeholders, scales, outcomes, and decision-making contexts (Richards et al 2004; Reed, 2008). Typologies can also be linked to different rationales and methods of engagement (Reed, 2008). Tippett *et al.* (2007), Blackstock *et al.* (2007), and Reed (2008) review and synthesise the evolution typologies of engagement, some of which are included in **Table 3.8**.

Table 3.8. Typologies and categorisations of engagement.

Typology/Categorisation	Example
Different measures of the level of engagement on a scale.	Arnstein (1969): Ladder of participation Davidson (1998): Wheel of engagement Pretty (1995), Lawrence (2006), Blackstock *et al.* (2007), Davies and White (2012): Other terms
Different decision-making styles (spectrum from fully technocratic to fully deliberative).	Hammond and Shackley (2010)
Different directions of information flow.	Rowe and Frewer (2005)

Ultimately, the typology and methods of engagement used will depend upon the context and objectives, which provide a basis for distinguishing and selecting the most appropriate option(s). Each typology has both strengths and weaknesses (Cook *et al.* 2013) and it is important to consider the complexities related to aspects of power, manipulation, and control that are inherent in all the different forms and levels of stakeholder engagement (Richards *et al.* 2004; Tippet *et al.* 2007). Regardless of the typology used to categorise stakeholder engagement efforts, the process should involve defining a shared problem and seeking collective solutions to promote creative approaches to knowledge production and the identification of solutions to shared challenges (Richards *et al.* 2004).

Knowing the most suitable engagement methods to employ in any given circumstance depends upon the objectives of the stakeholder engagement process. Many contexts and projects involve the use of more than one form or level of engagement (Durham *et al.* 2014). There are no right or wrong answers with respect to stakeholder engagement; however, certain approaches may lead to increased transparency, credibility, accountability, trust, legitimacy, empowerment, conflict management, and democratic decision-making versus other approaches that may result in opposition, distrust, disillusionment, disempowerment, manipulation, bias, abuse of power, and engagement fatigue. The outcomes of stakeholder engagement efforts depend largely upon the individuals involved, the

quality of the process, and the context in which the engagement methods are used (Pretty, 1995; Durham *et al.* 2014).

Engagement approaches have been used in a wide variety of disciplines, sectors, and geographies and from local to global scale. Research on global scale stakeholder engagement processes is related to knowledge production and use is relatively scarce, however there are some parallels to be drawn between engagement processes used in the development of IUCN knowledge products and some of the negotiation and consensus based work of the: (i) International Platform on Biodiversity and Ecosystem Services (IPBES) (Montana *et al.* 2017); (ii) Intergovernmental Panel on Climate Change (IPCC) (Hulme and Mahony, 2010); and (iii) Global Environmental Assessments (Mitchell, 2006).

The diversity of contexts in which engagement approaches have been used has resulted in a multitude of approaches and interpretations, which can result in competing rationales and confusion between processes and outcomes. Typologies have been introduced to outline the differences between approaches, to help improve our understanding of 'what works best when' (Reed, 2008), and to begin to develop good practice. I have used Rowe and Frewer's (2005) typology, which is based on the direction of information flow, in the context of this investigation of the end-user engagement process. Rowe and Frewer (2005) differentiate between three different engagement methods ranging from communication to consultation to participation. These engagement approaches vary in terms of the type and direction of the flow of information transferred and/or exchanged between those who conduct the engagement (referred to as the sponsor – in the context of this thesis, the IUCN Task Force) and those who are targeted for engagement (referred to as the representatives – in the context of this thesis, the end-users) (**Figure 3.2**).

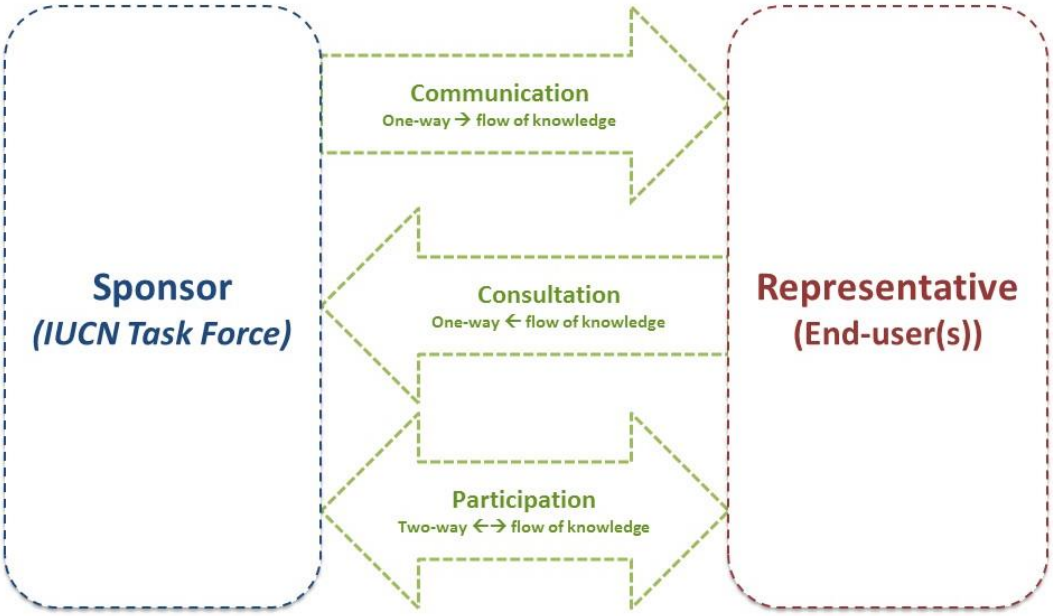


Figure 3.2. Three types of engagement and the direction of information flow (based on Rowe and Frewer (2005)).

Communication involves a one-way flow of information from the sponsor to the representatives and no involvement or feedback from the representatives is sought. Consultation involves a one-way flow of information from the representatives elicited by the sponsor; however, no formal dialogue exists between the two. Participation involves information being exchanged in both directions in the form of dialogue and partnership. These different methods of engagement vary in terms of their objectives and the way in which the effectiveness and success of both the process and outcomes are measured. They also closely relate to the distinction between knowledge transfer and knowledge exchange explored earlier in this chapter.

Conceptualising the end-user engagement process in these terms (i.e. knowledge transfer, knowledge exchange, communication, consultation, and participation) provides a useful starting point for considering and evaluating the purpose, process, outputs, and outcomes. The other components of the global stakeholder

consultation process that informed the development of the KBA Standard (i.e. technical workshops with subject experts, regional workshops with additional stakeholders, and the online consultation with all stakeholders (**Chapter 2,** Figure 2.3)) can all be considered in terms of this typology; however, the focus of this thesis is the end-user engagement component (which consisted of interviews and a questionnaire) that was undertaken to determine their needs and concerns.

3.2.3 Stakeholder analysis

I found the description of stakeholder analysis in Reed *et al.* (2009) particularly useful and relevant to the work of the IUCN Task Force and the process investigated through this thesis. The use and relevance of this approach in the applied context of biodiversity conservation is evidenced through its inclusion in the Biodiversa Stakeholder Engagement Handbook (Durham *et al.* 2014). Reed *et al.* (2009) define stakeholder analysis as a process that:

> *"i) defines aspects of a social and natural phenomenon affected by a decision or action; ii) identifies individuals, groups and organisations who are affected by or can affect those parts of the phenomenon; and iii) prioritises these individuals and groups for involvement in the decision-making process."*
>
> p. 1933

The stakeholder analysis approach used in this thesis involved: (i) identifying stakeholders; (ii) categorising stakeholders; and (iii) understanding stakeholders. These steps are described and explored herein.

3.2.3.1 Identifying stakeholders

Before a stakeholder engagement process can be designed and implemented, it is important to first identify who the relevant stakeholders are (i.e. those that are affected by, can influence, or have an interest in the project or research). Ideally the

identification of stakeholders involves an iterative process that uses a combination of methods, such as: expert opinion, self-selection, focus groups, semi-structured interviews, brainstorming, mind-mapping, and snowball sampling (Reed *et al.* 2009; Durham *et al.* 2014). The identification of stakeholders can be done in a participatory or non-participatory way; however, participation in the identification process can help to refine the scope of the issue and those who may have a stake or interest in it (Durham *et al.* 2014; Reed and Curzon, 2015). It is important to not purposefully or accidently omit certain stakeholders or groups as this could result in the marginalisation of certain groups, a bias of results, and the potential for a lack of support for the process, outputs, and outcomes (Reed *et al.* 2009; Durham *et al.* 2014). Equally, despite efforts to be representative, it is not always possible to identify and include all stakeholders and decisions must be made about 'who's in and why' based upon transparent and robust criteria related to the issue at hand (Reed *et al.* 2009). The identification and engagement of stakeholders should be purposeful and mutual benefits and expectations should be considered and made clear throughout the process (Jolibert and Wesselink, 2012). Once stakeholders have been identified and questions about 'who's in and why' are considered, the next step is to categorise stakeholders.

3.2.3.2 Categorising stakeholders

Categorising stakeholders helps to determine what level of engagement is most suitable for each stakeholder or stakeholder group. There are two broad approaches to categorisation referred to as top-down analytical categorisations and bottom-up reconstructive categorisations (Reed *et al.* 2009). **Table 3.9** provides examples of each approach to categorisation.

Table 3.9. Examples of stakeholder categorisation approaches (based on Reed *et al.* 2009).

Categorisation approach	Examples
Top-down analytical categorisations	– Interest vs. influence – Cooperation vs. competition – Cooperation vs. threat – Supportive vs. unsupportive – Urgency, legitimacy, and influence
Bottom-up reconstructive categorisations	– Discourse analysis and Q methodology – Stakeholder-led card sorting categorisation – Strategic Perspectives Analysis – Conflict mapping

Top-down analytical categorisations are often conducted without involving stakeholders and can therefore be subject to bias and may result in the identification of typical stakeholders (colloquially known as the 'usual suspects'). Bottom-up reconstructive categorisations involve stakeholders in defining their own categories based upon their own concerns and contexts (Reed *et al.* 2009). Once stakeholders have been identified and categorised, the next step is to understand stakeholder needs and concerns.

3.2.3.3 Understanding stakeholders

It is important to determine the relationships that stakeholders have with one another, their needs and concerns in relation to the project or research, their willingness and capacity to engage, and the best ways to engage with them (Reed *et al.* 2009). Durham *et al.* (2014) emphasise that it is important to choose the right engagement method, or combination of methods, for the right purpose and context in order to meet the needs, capacity, and expectations of the relevant stakeholders. Depending upon the context and objectives, engagement methods can be one-way (i.e. knowledge transfer including communication or consultation) or two-way (i.e. knowledge transfer including participation) (Reed *et al.* 2009).

Stirling (2008) and Durham *et al.* (2014) differentiate between stakeholder engagement methods and facilitation techniques that are suitable for opening up and those that are used for closing down. Opening up methods help to jointly open a dialogue and gather information on the relevant issues in order to link the engagement effort to the needs and interests of stakeholders. Closing down methods help to start making decisions on the most appropriate actions based upon what has been learned and/or produced through the project or research. Integrating methods are used throughout the process to ensure that stakeholder input is being integrated. This relates to the mixed methods approach used in this thesis to: (i) open up and discover end-user needs and concerns; (ii) to close down by categorising end-user input; and (iii) integrate this input to inform the development of the KBA Standard. **Table 3.10** provides examples of the practical methods that may be suitable at different levels of engagement to open up, close down, and integrate.

Table 3.10. Examples of stakeholder engagement methods that may suit different levels of engagement (adapted from Durham *et al.* 2014).

Level of engagement	Examples of methods
Communication	Website, social media, newsletters, videos, lectures, databases, publications.
Consultation	Meetings, forums, interviews, questionnaires.
Participation	Workshops, focus groups, steering committees, advisory panels.

Reed (2008) states that disagreement still exists amongst practitioners and stakeholders regarding good practice for stakeholder engagement. Some warn against a using a tool kit or idealised standard approach to engagement as each context is so unique that outcomes and decision quality depend more on the way in which the process is conducted than the tools that are used (Chess and Purcell, 1999; Richards *et al.* 2004; Reed, 2008). Good practice recommendations do exist and are based upon quantitative evaluations and qualitative analysis (see Reed (2008) for a review). There remains a need for improved understanding and general guidance regarding 'what works best when'. Having a clear approach to

evaluate the purpose, process, outputs, and desired outcomes of engaging stakeholders is an important part of determining whether the context specific objectives have been achieved.

3.3 Evaluation: why, when, what, and how

This section relates to the why, when, what, and how of evaluation. This applies to evaluating knowledge transfer, knowledge exchange, and stakeholder engagement. Many discuss the reasons for, importance of, lack of, and methods of evaluating knowledge transfer, knowledge exchange, and stakeholder engagement processes and outcomes (Johnson, 1998; Lavis *et al.* 2003a; Blackstock *et al.* 2007; Mitton *et al.* 2007; Contandriopoulos *et al.* 2010; Fazey *et al.* 2014). Evaluation allows findings to be conveyed to other similar contexts and for lessons learned to be captured and shared (Mitton *et al.* 2007). The summative evaluation undertaken in this thesis led to the development of a set of lessons learned and recommendations to inform future end-user engagement practice.

A distinction that has been made in the evaluation literature touches upon the differences between evaluating the process (which promotes outcomes or impact) and evaluating the outcomes or impact (the resulting actions, decisions, and changes that occur without a focus on why these outcomes occur) (Rowe and Frewer, 2000; Beierle, 2002; Lavis *et al.* 2003a; Thomson *et al.* 2008; Fazey et. al 2014). It is still useful to evaluate both process and outcomes to inform 'what works best when', to establish whether process and/or outcome objectives have been reached, and as a part of the knowledge transfer, knowledge exchange, stakeholder engagement, and learning process itself (Fazey *et al.* 2014). This thesis also evaluates and considers the purpose of the end-user engagement process. The evaluation of the purpose, process, outputs, and outcomes is also important for: financial (cost-benefit), practical (learn, adapt and improve), ethical/moral (representation and influence), and theoretical (increase understanding of 'what

works best when') reasons (Rowe *et al.* 2004). Improved theoretical and empirical understanding of 'what works best when' contributes to understanding the effectiveness of engagement mechanisms in different contexts (Rowe and Frewer, 2004). Often the effectiveness of engagement processes and outcomes is simply evaluated using numbers and diversity of participants and processes. Although this type of practical approach can tell us certain things, more systematic and meaningful evaluations about 'what works best when' can provide a wider context of possibilities in which to interpret the complexity of purposes, processes, and outcomes (Rowe and Frewer, 2004). A review by Blackstock *et al.* (2007) stresses the importance of selecting appropriate criteria and data collection methods based on the purpose of the evaluation.

3.3.1 Why evaluate?

Evaluation of the purpose, process, outputs, and outcomes of knowledge transfer, knowledge exchange, and stakeholder engagement efforts is important for determining if the undertaking has successfully reached the intended objectives. Evaluation may help to inform stakeholders about how their input has been integrated (increased transparency), to demonstrate efficiency or value of the process, to assist with quality control, and/or to improve the learning process for both the sponsors and stakeholders (Blackstock *et al.* 2007; Durham *et al.* 2014).

3.3.2 When to evaluate?

Knowing when to conduct the evaluation is the next question to consider. The evaluation can occur: (i) before the implementation of the policy, project, or programme (referred to as ex ante) in order to consider and inform the process early on; (ii) during the process (referred to as process evaluation) in order to determine how the outcomes were produced, improve the process, and build on strengths; (iii) during the process (referred to as formative evaluation) in order to

reflect on whether or not the engagement is going in the right direction and to adapt the process as needed; (iv) after the process has concluded (referred to as summative evaluation) in order to reflect upon what worked, what didn't work, and lessons learned for future improvement; and (v) after the process has concluded (referred to as ex post) to determine the effects of the policy, project, or programme (Blackstock *et al.* 2007). A summative evaluation is used to evaluate the purpose, process, outputs, and outcomes of the end-user engagement exercise investigated in this thesis.

3.3.3 What and how to evaluate?

Ideally, indicators or criteria for the evaluation should be determined with stakeholders that reflect recognisable, achievable, describable, tangible, and relevant measures (Durham *et al.* 2014). Evaluation should start by defining what successful or effective stakeholder engagement process and outcomes are in any given context. Blackstock *et al.* (2007) refer to this first step as bounding the topic, which involves clarifying the objectives of the process and the evaluation. This can be challenging due to the complexities of contexts, variation over time, and the potential of multiple objectives that are important to different stakeholders for different reasons (Blackstock *et al.* 2007). Despite these challenges, it is important to define an evaluation topic and determine indicators or criteria to measure effectiveness. Determining indicators or criteria can be difficult due to the complex and diverse nature of objectives and perspectives of success; however, it has been argued that the use of criteria (based on theory and/or stakeholder perspectives) to evaluate processes and outcomes contributes to a better understanding of 'what works best when' in certain contexts (Rowe and Frewer, 2004). Rowe and Frewer (2000) propose a set of acceptance and process criteria that indicate some important aspects and questions for evaluations to consider, and Blackstock *et al.* (2007) provide a comprehensive review of evaluation criteria for participatory research. Many of these relate directly to the recommendations that emerged from

the results summative evaluation in **Chapter 5** and **Chapter 8** of this thesis, which involved an assessment of the purpose, process, outputs, and outcomes using a set of principles of good practice in international standard setting. This choice of principles is discussed and justified further in **Chapter 4**. Blackstock *et al.* (2007) state that research that evaluates the influence of stakeholder engagement processes or studies that address long-term reflection upon the lessons learned is lacking. Blackstock *et al.* (2007) also emphasise the importance of this type of reflection to contribute to improved accountability, management, knowledge production, and organisational learning. This thesis aims to address this gap.

3.4 Summary

This chapter provides an overview of the concepts and theories that inform this thesis. This research helps to close the gap between stakeholder engagement theory and practice by applying these concepts, theories, and methods in a pragmatic way and in an applied global context. Stakeholder engagement rationales, typologies, and methods relate well to the concepts of knowledge production transfer, exchange, and use reviewed in this chapter. These concepts are combined and applied within the context of global biodiversity conservation in this thesis to investigate the purpose, process, outputs and outcomes of engaging end-users in the development of the KBA Standard.

4 Research Methodology

4.1 Research design and methodology

This chapter provides an overview of my use of a mixed methods action research approach to co-researching *with* the IUCN Task Force *on* the end-user engagement process *for* the development of the KBA Standard. I justify why certain methodological decisions were made and explain what my multiple roles in the research process have been. I discuss how I became involved as both a participant in, and observer of, the development of the KBA Standard and the end-user engagement component in particular.

My research progressed and evolved alongside the development of the KBA Standard. This required an open-minded, adaptive, and exploratory approach. I began my PhD from a background in the natural sciences (environmental science and cold region hydrology) and I continue to discover and explore different philosophical perspectives and theories of knowledge (epistemology[14]), which I use in this thesis to contemplate the reality of the social world, why we need to research it, and how to go about researching it. During my transition from natural science research to social science research, I became increasingly aware of the complex social processes involved in scientific discovery, including in the context of the development of the KBA Standard. Pragmatic[15] philosophical perspectives and a critical realist epistemology currently most closely align with my own thinking and provide an appropriate lens through which to view this research. The interpretation of critical realism that I use here implies that both the natural and

[14] Epistemology (from the Greek word from Greek *epistēmē*, which means 'knowledge') is the branch of philosophy concerned with the theory of knowledge.
[15] Drawing upon the philosophical perspectives of classic pragmatists Charles Sanders Peirce, William James, and John Dewey.

social sciences, and other means, enable us to know about the environment, but that our knowledge is influenced and limited by our experiences (Bhaskar, 1978).

I designed and implemented this research using an emergent and grounded approach[16] towards action research and mixed qualitative and quantitative methods, which were well suited to addressing my research questions. This mixed methods action research aligns well with my pragmatic and applied approach towards working *with* the IUCN Task Force (despite arguments related to divergent epistemologies and related questions of argumentative coherence (Lipscomb, 2011) discussed further below in Section 4.1.2). My action research methodology led to my choice of mixed methods to bridge the gap between qualitative and quantitative research. Social realities are complex and multifaceted and a mixed methods approach is useful for capturing and assessing this complexity from diverse perspectives. In this thesis I did not explicitly test or generate particular theories but I have examined and explored theory to contribute to the analysis of these data and to help understand the processes involved in the development of the KBA Standard. **Figure 4.1** depicts the epistemological and methodological foundations of this research and how these link to my choice of methods.

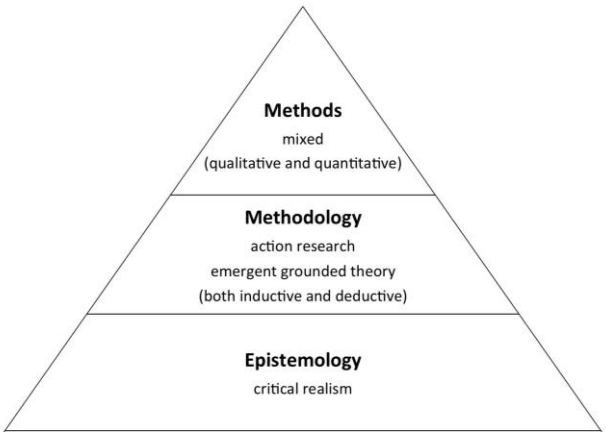


Figure 4.1. The building blocks of my research.

[16] An emergent and grounded approach generates and/or discovers theory and concepts from data. Discussed further below.

In this chapter I discuss the action research principles that informed my research approach, I provide a chronological narrative account of how my research approach and thinking evolved alongside the development of the KBA Standard, and I provide further details on the methods I used to work *with* the IUCN Task Force *on* the end-user engagement process *for* the development of the KBA Standard.

4.1.1 The benefits and challenges of an action research approach

This research is issue-driven and reaches across different disciplines, theories, and methods to inform practice (Robinson, 2008), which makes it well suited to a mixed methods action research approach. The IUCN Task Force and I worked in partnership by collaboratively defining the research problems, designing and implementing the research methods, and evaluating the purpose, process, outputs, and outcomes of engaging end-users. As both a participant (as a member of the IUCN Task Force) and observer (as a researcher) I have had the unique opportunity to work on the end-user engagement process through participant observation, end-user interviews, an online end-user questionnaire, and a summative evaluation.

Greenwood and Levin (2007) provide a good overview of the history of action research. They state that Lewin (1946) introduced the term action research as a new approach to knowledge production based upon solving real-life problems whereby the researcher is directly involved in and influences the social setting they are studying. Action research has since evolved and diversified into sometimes complementary and sometimes competing strands of thinking, such as: (i) participatory action research (Whyte, 1991); (ii) collaborative action research (Oja and Smulyan, 1989); (iii) pragmatic action research (Greenwood and Levin, 2007); (iv) participatory research (Hall, 1975; Cornwall and Jewkes, 1995); and (v) collaborative inquiry (Reason and Rowan, 1981). The action research approach

used in this thesis draws mainly upon the following characteristics from participatory action research (Whyte, 1991):

- Use of the term practitioner partner[17] to describe that some of the people in the organisation under study (IUCN Task Force) actively participated with the researcher through the research process from the initial stages through to the results and discussion of action implications;
- The practitioner partners were actively engaged in the quest for information and ideas to guide their future actions; and
- This approach simultaneously pursues truth and solutions to problems.

My action research approach involved phases of collaborative planning, acting, observing, and reflecting (Masters, 1995). Rather than conventional research that focuses on knowledge for understanding, my research has focused on knowledge for action (Cornwall and Jewkes, 1995). This involved collaboration with the IUCN Task Force to enable mutual understanding and common action (Oja and Smulyan, 1989). We jointly focused on a specific problem (improving our understanding of end-user needs and concerns) and worked collaboratively towards improving processes, considering solutions, ascertaining lessons learned, and developing recommendations for future processes. This involved the IUCN Task Force members in the co-development of the research agenda rather than imposing upon them a set of pre-defined problems and solutions (Bryman, 2008). My collaborators therefore shared in the planning, implementation, and analysis of the research and each contributed different expertise and unique perspectives (Oja and Smulyan, 1989).

As described in general terms by Whyte (1991), certain practitioner partners can be particularly knowledgeable, insightful, and perceptive and, in the context of this

[17] The term '*practitioner'* refers to those whose profession is related to the practice of biodiversity conservation.

research, the highest level of collaboration took place with five main IUCN Task Force practitioner partners:

- Annabelle Cuttelod: Conservation Planning Officer, IUCN Secretariat member supporting the work of the IUCN Task Force (UK);
- Thomas Brooks: Head of Science and Knowledge Unit, IUCN (Switzerland);
- Nigel Dudley: IUCN Task Force Steering Committee member and a founder and consultant at Equilibrium Research (UK);
- Penny Langhammer: IUCN Task Force Co-chair (USA); and
- Stephen Woodley: IUCN Task Force Co-chair (Canada).

The approaches that I drew from to inform this collaboration all share a commitment to shared inquiry and democratic ideologies and represent a shift in understanding about who instigates, conducts, analyses, presents, acts on, and benefits from the research.

An action research approach is therefore well suited to my pragmatic approach due to the emphasis placed on collaboration and the aims to ensure the practical relevance of the research findings. As Oja and Smulyan (1989) describe, not every project aims at or meets all of the goals of action research, but most include the main elements in a pragmatic loosely defined and executed way. The idealistic, collaborative, and democratic picture that an action research approach tends to portray can sometimes be more rhetoric than fact. It was therefore important for me to remain aware of the limitations of this research approach and to continuously reflect upon and critique our collaborative research process. Action research has been criticised for lacking rigour, being too partisan, and encouraging prejudices in favour of a particular cause or ideology (Bryman, 2008). It has also been challenged because it emphasises the importance of developing a deep understanding of one specific setting, which can limit the ability to generalise research findings. The use of action research in this thesis addresses these critiques

by: (i) combining action research with a mixed methods approach; (ii) using it in a large scale global conservation context to explore conceptual and theoretical questions related to stakeholder engagement and the production, transfer, exchange, and use of knowledge; and (iii) developing a set of general recommendations that can be applied to different contexts.

It is important to state that since my action research approach involved close collaboration and co-researching with the IUCN Task Force, there are instances in this thesis where I refer to our collaborative efforts by using the term 'we'. In other instances, I take ownership of my individual effort by using the term 'I'. When the passive tense is used, this is related to the collaborative efforts of the IUCN Task Force and me.

4.1.2 Using mixed methods

I used a mixed methods action research approach to collect and analyse qualitative and quantitative data in a way that allowed for the emergence of conceptual and theoretical ideas. This type of approach is often referred to as a grounded theory (Glaser and Strauss, 1967; Bryman, 2008), which can be applied in a variety of different ways. My objective was not to use a strict grounded theory approach to generate theories; however, I did use it to enable conceptual and theoretical ideas to emerge during the research process (Charmaz, 2008). As these emerged it was necessary to collect additional data to test these ideas. This iteration between data collection and exploring evolving concepts and theories is common to an emergent grounded approach.

Some have argued against the use of mixed methods in research (as discussed in detail in Sieber, 1973; Bryman, 1984; Howe, 1988; Guba, 1990); however, I am of the view that a mixed methods approach can enable the strengths of each approach to be realised and the weaknesses to be offset (Bryman, 2008). Action research has

been referred to as a mixed-method research strategy (Greenwood and Levin, 2007) whereby the choice of methods is determined by the context. Pragmatism has been referred to as the philosophical partner of a mixed methods research approach (Johnson and Onwuegbuzie, 2004); however, it is important not to use this as a way around the challenges and theoretical disputes related to the difficulty of combining methods (Lipscomb, 2011). The combined use of both qualitative and quantitative data has been debated due to differences in epistemology; however, many agree (Johnson and Onwuegbuzie, 2004; Brannen, 2005; Bryman, 2008) that the combination can prove extremely useful for several reasons. In this thesis, the use of semi-structured interviews is complemented by a quantitative questionnaire and I justify this approach in three ways: (i) qualitative research can be used to develop hypotheses and quantitative questionnaire items can then be developed to test them; (ii) combining qualitative and quantitative methods can enhance the comprehensiveness and credibility of the findings; and (iii) qualitative research can provide detailed contextual understanding and quantitative research can provide broader generalisable findings (Bryman, 2008).

4.1.3 Evolution of the research approach

This section outlines how I came to work *with* the IUCN Task Force *on* the end-user engagement process from 2013-2016, which involved action research with the five practitioner partners listed above. My awareness of and engagement with the global stakeholder engagement process began in October 2012. At that time, my research was focused on biodiversity impact mitigation and biodiversity offsetting. One of my colleagues from the private sector forwarded me the KBA Framing Workshop Report (IUCN, 2012b). She had participated in the workshop as an end-user (from a commercial bank perspective) and thought that the KBA approach might be of interest to my research. The participants of the Framing Workshop were documented on the first page of the report and I noted that there was a participant from Parks Canada named S. Woodley. Given that he was based in

Chelsea, Quebec (my small home town in Canada) I decided to reach out to him directly. S. Woodley and I met in person in January 2013 and discussed the work of the IUCN Task Force, the development of the KBA Standard, and the end-user engagement process in particular. I expressed my interest in the ability of KBAs to inform biodiversity impact mitigation decision-making from a private sector end-user perspective and described the context of my research plans at that time. Following our meeting, S. Woodley nominated me to join the IUCN Task Force, which also automatically entails membership to the SSC and the WCPA. He also extended an invitation to the KBA Criteria and Delineation Workshop (KBA Technical Workshop). He eventually became one of my practitioner partners and a valuable mentor for my research.

The next interaction I had with the KBA process was during the International Association of Impact Assessment (IAIA) Special Symposium on Biodiversity and Ecosystem Services, where I presented a poster of my research. There was a KBA session titled 'Key Biodiversity Areas: Contribute to the development of a global standard' (a KBA Regional Event) that I attended as a participant. The workshop:

> *"…provided participants an update on KBAs and sought their views on the applications and the challenges in using this standard in their daily practice."*
>
> IUCN (2013: 1)

This workshop provided me with an overview and update on the KBA process as well as insight into how existing and potential end-users might use the KBA Standard in their work, what products/tools they needed and what concerns they had.

The next component of the global stakeholder engagement process that I was involved was the KBA Criteria and Delineation Workshop. The residential nature of

this workshop provided a good opportunity for participant observation and informal ad-hoc interviews. It also enabled me to develop an improved understanding of how the IUCN Task Force members and their network worked together and how they made decisions in a democratic and participatory way. During this workshop, I became increasingly interested in the global stakeholder engagement process and how it was being used to inform the development of the KBA Standard. **Figure 4.2** was taken during the KBA Criteria and Delineation Workshop.

Figure 4.2. KBA Criteria and Delineation Workshop Participants (I am second from the left on the bottom row) (IUCN, 2013).

During this workshop, I noticed that there were opportunities to work in collaboration with the IUCN Task Force who were stretched in terms of staff, time, and other resources. I began to think about the potential to conduct action research through simultaneously working in collaboration with the IUCN Task Force and co-researching the global engagement process that they were convening. I thought that by asking several timely, interesting, pragmatic, and applied research questions I could contribute to advancing understanding on global engagement

processes as well as providing input into the work of the IUCN Task Force. During this workshop, I offered to support the IUCN Task Force communications, mainly because no one else volunteered when the request for support was made but also because I felt as though this could demonstrate the potential benefits of a reciprocal arrangement. This resulted in unique access to information, people, and processes that suited both my research approach and the needs of the IUCN Task Force.

During the final day of the KBA Criteria and Delineation Workshop, I sat down with T. Brooks and A. Cuttelod to discuss my research and my interest in studying the KBA process. Thankfully, they were keen to collaborate and open minded about the nature of my research. We focused mainly on the end-user engagement process due to the nature of my work experience, my research focus, and my interests. From this point forward, T. Brooks and A. Cuttelod both also became practitioner partners and valuable mentors for my research. In April 2013, T. Brooks formally took on the role of acting as my external IUCN supervisor and I signed a volunteer contract with the IUCN Task Force (Volunteer Contract, **Appendix 4-A**). I then worked with A. Cuttelod on the IUCN Task Force website and the stakeholder contact database.

My research interests and private sector network linked well to the end-user engagement process because the private sector was an end-user group identified in the typology of end-users developed during the Framing Workshop (IUCN, 2012b). T. Brooks therefore introduced me to N. Dudley to assist him with the end-user engagement process that he was leading. N. Dudley had developed an end-user interview process, based upon the mandate for the engagement of end-users that emerged from the Framing Workshop (IUCN, 2012b), to determine end-user needs and concerns in relation to the development and implementation of the KBA Standard. N. Dudley and I agreed that I would initially assist with the end-user

engagement process by conducting the private sector interviews. We also discussed that because of my involvement in the process and through assisting with the interviews, I would be one of the co-authors of the end-user report (a compilation of the end-user interviews – now Dudley *et al.* (2014)) and lead or co-author on any future peer-reviewed journal articles resulting from the end-user engagement work. The next interaction I had with the KBA process was during the next technical workshop, the KBA Governance Workshop. This provided another intense period of participant observation and action research. Of particular interest was how open and honest people were with me and how intrigued they were by the research I was doing. **Figure 4.3** was taken during the KBA Governance Workshop.

Figure 4.3. KBA Governance Workshop participants (I am third from the left on the top row) (IUCN, 2014c).

T. Brooks, N. Dudley, and I later met to discuss the status of the end-user engagement process and we began the consolidation and synthesis of the interview outcomes for the end-user report (Dudley *et al.* 2014). This included the development of a short two-page summary section on the end-user engagement

process and outcomes for the KBA Standard Consultation Document (IUCN, 2015). We assessed the gaps in our coverage of end-user groups and I agreed to take on 10 more interviews. During this meeting, we also discussed the development of an online end-user questionnaire and whether and/or how this might be a useful tool for comparing and corroborating the data obtained from the interviews with a larger sample size of end-users. We developed hypotheses about sector and regional trends in end-users' needs and concerns and how the questionnaire could also serve to test these. The approaches used to undertake and analyse both the qualitative interviews and quantitative questionnaire are described in detail below.

The IUCN hosts a World Parks Congress (WPC) once every decade and the sixth WPC was held in November 2014. There were three KBA related sessions at the WPC in 2014 (KBA Regional Event) including a session called '*How different sectors use Key Biodiversity Areas (KBAs)'*. The session description stated that:

> *"A wide range of sectors across society need to know where the sites that make a significant contribution to the global persistence of biodiversity are: from supporting the establishment of protected area networks, to reporting against international convention targets, and for guiding investments and development. This participatory panel discussion will highlight some of the applications of KBAs, the added value they provide and the challenges that remain."*
>
> WPC (2014)

We 'soft' launched the end-user report (Dudley *et al.* 2014) during this WPC KBA session, where I summarised the end-user engagement process and presented the interim results. During the 2014 WPC, I was also able to conduct additional participant observation and end-user interviews and also engage in discussions with the IUCN Task Force members, end-users, and additional stakeholders. Round One of the KBA online consultation process was on going during the WPC and we recruited additional end-user interviewees and questionnaire respondents via word-of-mouth and targeted outreach during the conference. The IUCN also hosts a

World Conservation Congress (WCC) once every four years and there were seven KBA related session at the WCC in September 2016. One of the KBA sessions was the formal launch of the KBA Standard at which I presented the end-user process and outcomes.

As described above, my practitioner partners were closely involved in: (i) collecting the data (interviews in collaboration with N. Dudley, questionnaire in conjunction with the broader online consultation process); (ii) refining research questions and instruments (T. Brooks, A. Cuttelod, and S. Woodley); (iii) targeted outreach to end-users through the IUCN network (T. Brooks, A. Cuttelod, and N. Dudley); (iv) discussing the aims and objectives of the research and the analysis and interpretation of the resulting data (T. Brooks, N. Dudley, S. Woodley, and P. Langhammer); (v) informing and influencing practice through the integration of comments related to end-user needs and concerns into the development of the KBA Standard and the associated governance structures (mainly A. Cuttelod, P. Langhammer, and S. Woodley); and (vi) reflecting upon the end-user engagement process through a summative evaluation (T. Brooks, A. Cuttelod, N. Dudley, S. Woodley, and P. Langhammer).

I have described the evolution of my research process using this chronological narrative to be transparent about the nature of my research, how it evolved over time, and the elements of opportunism and good fortune that were involved. **Table 4.1** summarises these global meetings and events, which constitute the face-to-face elements of my action research approach. In addition to these face-to-face meetings and workshops, I also had numerous phone conversations and email exchanges with my practitioner partners throughout the duration of my research. These were invaluable bilateral discussions that served to clarify and check in with the work of the IUCN Task Force, share interim results, and iterate my research approach.

These were also particularly useful due to the diverse geographic locations of my collaborators, which necessitated remote communications and collaboration.

Table 4.1. Events and meetings with IUCN Task Force practitioner partners.

Date	Event	Location	Action/Outcome	Practitioner Partner(s)
January 2013	First meeting	Chelsea, Canada	Membership to the IUCN Task Force	S. Woodley
February 2013	IAIA Symposium (KBA Regional Event)	Washington, USA	Participant observation	n/a
March 2013	Criteria and Delineation Workshop (KBA Technical Workshop)	Front Royal, USA	Participant observation	T. Brooks A. Cuttelod S. Woodley
July 2013	Meeting concerning my involvement in the end-user engagement process	Edinburgh, UK	Action research	N. Dudley
November 2013	Governance Workshop (KBA Technical Workshop)	Brasilia, Brazil	Action research and participant observation	T. Brooks A. Cuttelod P. Langhammer S. Woodley
February 2014	End-user report meeting	Cambridge, UK	Action research	N. Dudley T. Brooks
November 2014	World Parks Congress (KBA Regional Event)	Sydney, Australia	Action research and participant observation	T. Brooks A. Cuttelod N. Dudley P. Langhammer S. Woodley
September 2016	World Conservation Congress (KBA Regional Event)	Honolulu, USA	Action research and participant observation	T. Brooks A. Cuttelod N. Dudley P. Langhammer S. Woodley

Figure 4.4 summarises the relevant roles and relationships between the IUCN Task Force, the action researcher (me), and the end-users. These components are described in detail in the following sections.

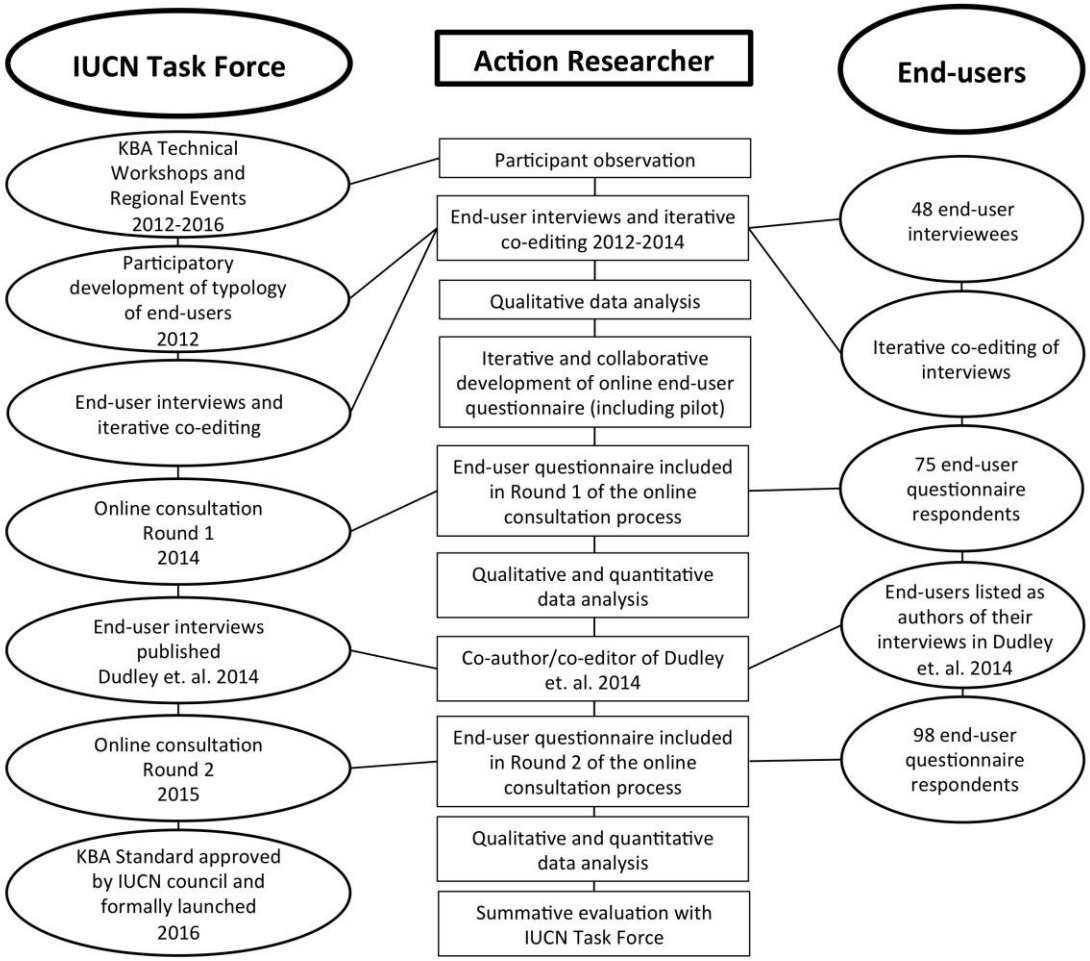


Figure 4.4. The different roles and relationships between the IUCN Task Force, the action researcher, and the end-users.

4.2 Research methods

I used a mixed methods action research approach that began with conducting participant observation during KBA Technical Workshops and Regional Events. Throughout the course of the research I also reviewed KBA related peer-reviewed papers, workshop reports, and IUCN Task Force documents to improve my understanding the KBA approach and the processes through which it was being produced with stakeholders. N. Dudley and I conducted qualitative semi-structured

interviews with end-users, which I analysed and used to inform the development of a quantitative questionnaire. I also conducted a summative evaluation with my practitioner partners to reflect on and learn from the things that we did well and to highlight areas that needed improvement. I combined the data obtained using these mixed methods in this thesis in order to produce a synthesis, interpretation, and assessment of the purpose, process, outputs, and outcomes of engaging end-users.

4.2.1 Participant observation

Participant observation is often used in ethnographic research; however, I used it herein as part of my action research methodology to explore and learn about the social setting I was studying and to inform my analysis of the interview and questionnaire data. This involved both collaborating with the members of the social setting in question (IUCN Task Force) and immersing myself in their social setting for an extended period (Bryman, 2008). As a member of the IUCN Task Force, I was both a participant and an observer. Using Gold's (1958) classification of participant observer roles (**Figure 4.5**) I consider my multiple roles as most closely linked to a participant-as-observer.

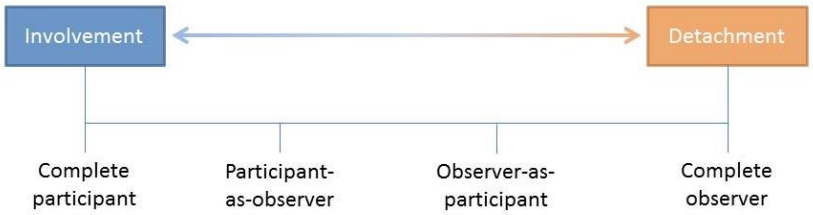


Figure 4.5. Gold's classification of participant observer roles (modified from Bryman, 2008: 411).

Bruyn (1966) states that this involves both detachment and personal involvement and provides a useful explanation of participant observation:

> *"While the traditional role of the scientist is that of a neutral observer who remains unmoved, unchanged, and untouched in his [sic] examination of phenomena, the role of the participant observer requires sharing the sentiments of people in social situations; as a consequence he himself is changed as well as changing to some degree the situation in which he is a participant".*
>
> p. 14

In my case, my role as participant-as-observer was made publicly known at the outset and IUCN Task Force members and the stakeholders participating in the end-user engagement process were made aware of my role. It was important for me to strive to maintain a conscious and unbiased approach so that I could remain open to all lines of enquiry. Participant observation helped me to learn about and reflect upon: (i) the work of the IUCN Task Force; (ii) my role within the IUCN Task Force; (iii) how the research process influenced me; and (iv) how I influenced the KBA end-user engagement process. It also provided me with a deeper level of understanding of the KBA Standard and the global stakeholder engagement process, which then informed my research approach and research questions.

This participant-as-observer role had both advantages and disadvantages. It enabled me to gain access and proximity to the people involved in the KBA process and it enabled me to observe and familiarise myself with the language they used and the assumptions they held. It also improved my understanding of the context of their work and allowed me to see the global stakeholder engagement process through their eyes. Participant observation enabled me to ask questions, learn, and evolve. Equally, there was the risk that I could over-identify with the group and the process, which increased the possibility of 'going native'[18]. I was reflexive throughout my research process by considering my impact on the engagement process as well as the impact of the research on my collaborators, the end-users, and myself (Doucet, 2008). These considerations allowed me to assess issues related to positionality (gender, race, class, sexuality, ethnicity, nationality, and

[18] *'Going native'*: adopting the worldview of the social setting being observed.

interests can all influence the research process), potential conflicts of interest (the risk that mutual interests might corrupt my research motivations), and reactivity (when stakeholders adjust their behaviour or responses due to the researcher's presence or due to an awareness that they are being observed) and address them when possible. I continuously assessed and questioned my research approach and kept a methods and reflexivity journal to document the decisions that the IUCN Task Force and I made and how my thinking on some of these challenging issues evolved over time.

It was important for me to maintain my independence as a participant-as-observer working in close collaboration with the IUCN Task Force. The IUCN Task Force acknowledged and respected this. The IUCN Task Force formally consented to the collaborative nature of the research through a signed collaboration memo on July 28th 2014 (Collaboration Memo, **Appendix 4-B**) and reviewed my ethics assessment (further details in Section 4.3 below). Although I maintained a participant-as-observer role throughout the prolonged duration of the research, my roles, responsibilities, and levels of engagement, collaboration and communication with the IUCN Task Force and the KBA process fluctuated. There were times of high levels of collaborative iteration and periods of reflection, minimal interaction, and independent analysis.

4.2.2 Qualitative interviews

N. Dudley and I conducted 24 semi-structured end-user interviews over the course of two years (2012-2014). The typology of end-user groups developed during the Framing Workshop (IUCN, 2012b: 24-25) and additional recommendations from IUCN Task Force members formed the basis for determining the end-users we targeted for the interviews (**Table 4.2**).

Table 4.2. Modified end-user typology from the Framing Workshop (IUCN, 2012b: 24-25).

Framing Workshop Categories	Simplified Categories for Analysis
Intergovernmental treaties Intergovernmental agencies Intergovernmental coalitions	Intergovernmental Agency
Multi-lateral development banks Multinational companies and industry associations Donors Investors	Private Sector (we also added/included/categorised consultants here)
International conservation and development NGOs Global assessments National NGOs Cultural/spiritual institutions Communities (indigenous and/or local)	Civil Society
Government: conservation agencies Government: agencies managing living resources Government: other agencies	National Government
Other secondary end-users	Academia

We consolidated the framing workshop categories for our analysis to ensure large enough sample sizes for each of the end-user groups. While it was not possible to distribute interviews as broadly as desired, we attempted to speak with all end-user groups and to cover each group evenly (Dudley *et al.* 2014).

4.2.2.1Semi-structured interviews

Our semi-structured interviews involved a series of five open-ended questions that formed a general guide for the interviews (**Table 4.3**); however, if needed it was possible to vary the sequence of questions depending upon the context of each interview. The questions were deliberately more open-ended than those found in structured interviews and N. Dudley and I, as the interviewers, maintained the ability to ask additional questions when relevant. The interviewees could respond to the semi-structured questions in a flexible manner, which helped us gain further insight into their perspectives and the things that they viewed as important. Interviewees were all asked the same questions and N. Dudley and I used the same

five questions throughout the course of the two-year interviewing process. To be consistent, and to maintain some comparability in our interviewing style (Bryman, 2008), N. Dudley sent me his semi-structured interview questions and the cover emails that he used to reach out to potential interviewees. This helped me to formulate my approach and to reach out to end-users by providing them with similar background information.

Table 4.3. Semi-structured open-ended interview questions.

♯	**Question**
Q1	What do you need from KBAs?
Q2	What tools and products do you require?
Q3	How do KBAs fit with your existing and emerging policies and procedures?
Q4	Do you have any fears/concerns about the application of the KBA Standard? If so, what are they?
Q5	What are the main recommendations you have for the development of the KBA Standard?

In certain cases, interviewees from the same end-user group or sector were interviewed together to document a unified perspective. This was helpful as we could integrate multiple individual perspectives from an organisation or sector into one interview; however, we may have also lost some of the nuanced differences in opinion and introduced the risk of alignment and 'group think'[19]. In total, we interviewed 45 individual end-users who contributed to 24 end-user interviews. N. Dudley also conducted four thematic interviews related to restoration, climate change, ecosystem services, and spiritual values, which are not included in the analysis contained in this thesis because I focus here on sector and UN Region[20] based end-user groups (UN Regions – **Appendix 4-C**). All 28 interviews are published in Dudley *et al.* (2014).

[19] Thinking or making decisions as a group that results in less creativity, innovation, or individual responsibility.

[20] UN Regional Groups: African Group, Asia-Pacific Group, Eastern Europe Group, Latin American and Caribbean Group, Western Europe and Others Group.

The interviews were conducted on an ad hoc basis depending upon end-users' availability and willingness to participate. The mode of interviewing that we used varied depending upon the location and availability of our global end-user interviewees. We conducted interviews by telephone, in person, and in writing (and in certain circumstances more than one interview mode was used). We acknowledge that this may have introduced undesirable mode effects and inconsistencies into our approach; however, some recent research has shown that interview mode effects may be not be so important, particularly when comparing between in person and over the telephone (Bryman, 2008; Vogl, 2013).

N. Dudley and I simultaneously conducted interviews and took detailed notes directly during the interviews. This approach was chosen due to the applied and pragmatic nature of the end-user engagement process, which involved co-editing and co-authoring the interviews with the end-users. This approach enabled us to share drafts of the interviews with interviewees quickly and to immediately begin the iterative editing process; however, it took both of us much longer than we had expected to negotiate interview dates and times, conduct the interviews, iteratively and collaboratively edit the interviews, and obtain final permission for publication in the public domain from the interviewees and their organisations.

This approach may have resulted in us missing or editing out of some important and interesting content; however, we considered this methodological compromise as essential to further engage end-users in the process and for them to take ownership of their interviews and feel confident about them being published in the public domain. All but two of the interviewees agreed to open authorship (the exceptions were our Mining and Metals and European Commission interviewees that were published semi-anonymously; however, the interviewees did allow us to list them as sources), and we believe that the ability to edit the interviews may also have helped them to obtain permission from their respective organisations to

publish them in Dudley *et al.* (2014). N. Dudley conducted 13 interviews, I conducted nine interviews, and we conducted two interviews together (**Table 4.4**). We conducted 24 end-user interviews; however, in certain instances (as outlined in **Table 4.4**) we interviewed multiple end-users as part of the same interview. This resulted in a total of 48 end-user interviewees, who contributed to the 24 end-user interviews. The end-user interviews provided in depth qualitative data on end-users' needs and concerns that other methods, such as observation or questionnaires, may not have been able to capture. The interviews highlighted areas of convergence and divergence in opinion between end-users that are explored in **Chapters 6** and **7**.

Table 4.4. End-user interview details (see Dudley *et al.* (2014) for further information, ND = N. Dudley, JM = J. Maxwell).

#	End-user Group / Organisation	# of end-users	Date of Interview	Interviewer and Type
Intergovernmental Agencies				
1	Ramsar Sites	2	13/09/13	ND by phone
2	World Heritage Sites	2	28/02/14	ND by phone
3	Ecologically and Biologically Significant Areas (EBSAs)	2	23/05/14	JM by phone
4	United Nations Development Programme (UNDP)	1	04/03/14	ND by phone
5	ASEAN Centre for Biodiversity	1	24/02/14	ND in writing
Private Sector				
6	Oil and Gas	3	15/10/13	JM by phone
7	Mining and Metals	2	26/11/13 and 09/05/14	JM by phone
8	World Bank Group	3	12/12/12 and 04/02/13	ND in person and by phone
9	Commercial Banks	4	10/12/13	ND and JM by phone and in writing
10	Food Industry	1	14/03/14	ND by phone
11	High Conservation Value (HCV) Areas	2	n/a	ND by phone and in writing
12	Global Environment Facility (GEF)	1	13/12/12	ND in person
13	Critical Ecosystem Partnership Fund (CEPF)	1	04/06/13	ND by phone
National Government				
14	Parks & Wildlife Finland	1	15/11/14	JM in person
16	European Union	5	04/07/14, 18/07/14 and 23/09/14	ND in person and by phone
Civil Society				
18	BirdLife International	2	27/06/13	ND and JM in person and in writing
19	The Nature Conservancy (TNC)	1	17/03/14	JM by phone
20	Conservation International (CI)	1	07/03/14	JM by phone
21	Bat Conservation International	2	29/07/13	ND by phone
22	Zoological Society of London (ZSL)	2	22/05/14	JM by phone
23	Dominican Republic (Grupo Jaragua)	1	06/03/14	JM by phone
17	Pacific Region	2	06/03/14	ND by phone and in writing
15	NatureServe and Natural Heritage Network	2	06/03/14	JM by phone
24	Indigenous Peoples' and Community Conserved Areas (ICCA Consortium)	1	28/06/13	ND in person

4.2.2.2 Interview sampling strategy

The sampling strategy used for the end-user interviews was a combination of purposive (strategic, non-probabilistic and based on specific goals/criteria), convenience (available by chance), and snowball (the use of existing contacts to establish new contacts) sampling approaches. Interviewees were often selected from an existing network of collaborators and contacts and consisted mainly of end-users who had an existing level of knowledge of or engagement with the KBA approach and therefore some specialist or relevant knowledge related to it.

4.2.2.3 Qualitative data analysis

Once we had collectively completed and finalised all 24 interviews, I spent a considerable amount of time analysing and re-analysing the content using an iterative coding process. The steps and details of my coding process are outlined in **Table 4.5**. I analysed the 24 interview by categorising and coding the content in a systematic and replicable manner (categorising and coding allowed me to break the data down into smaller component parts), which provided a transparent and objective method of analysis (Bryman, 2008).

Table 4.5. Steps and considerations in coding qualitative data (adapted from Bryman, 2008 and Gale *et al.*, 2013).

Step	Details
Step 1: Read	Once we had completed all the interviews, I read through them without attempting to develop categories, codes, or any form of interpretation. At the end of this review, I made some notes about the particularly interesting and important topics that emerged.
Step 2: Repeat	I read through the interviews again and made detailed notes about end-user needs and concerns that were particularly significant, relevant, and prominent. This included noting keywords and developing the beginnings of my categories and codes by identifying themes emerging from the data.
Step 3: Review	I began to review and integrate my categories and codes in order to consolidate similar themes and link emerging themes to topics of relevance to the KBA process and wider conservation debates.
Step 4: Consider	I began to consider the general concepts and theories that related to the categories and codes that were emerging and began making connections between them. Hypotheses about connections between and within end-user groups were also being formulated at this stage.
Step 5: Computer-assisted qualitative data analysis software (CAQDAS)	I imported the end-user interviews into a CAQDAS programme called NVivo to iteratively re-code the data. This helped me to develop a systematic approach to coding and helped to organise, view, query, and retrieve the data more easily. This does not help with decisions about coding or interpretation; however, it does help with processing qualitative data in a systematic and transparent way.
Step 6: Framework Method	I used the Framework Method to help further categorise the data and compare between interviewees and codes. The matrix output is a set of rows (interviews) and columns (codes) and cells (summarised data). This approach offers a set of clear steps that result in highly structured outputs, which enabled me to look at the data in different ways across and between different codes and interviews.

Initially, I used an open coding approach (Bryman, 2008) by manually coding the data in order to truly immerse myself in it (iteratively using multiple tools including manually coding using: pen, paper, flipcharts, and spreadsheets). I was then able to conduct focused coding (Charmaz, 2008) that included writing detailed memos (notes) that informed the consolidation of certain codes under broad categories. For this stage of the coding process, I used NVivo 10 data analysis software and iteratively coded until saturation was reached. Saturation, in this instance, is referring to the point at which no additional categories or codes emerged from the data. I then used the Framework Method to categorise the data and to facilitate comparisons between interviews and codes (Gale *et al.*, 2013). This process resulted in six main categories and 25 codes (**Table 4.6**).

Table 4.6. Qualitative interview categories and codes.

Interview Category	Interview Code
1. Stakeholder engagement	1a. Communication 1b. Local level stakeholder engagement
2. Existing approaches	2a. Complementary or conflicting approaches?
3. Issues of scale	3a. Global vs. national
4. Implementation of the Standard	4a. Data and additional information 4b. Timeliness of the KBA Standard 4c. Resources
5. Informing decision-making	5a. Management options 5b. 'Sustainable use' vs. 'no go' 5c. Prioritisation
6. Other	6a. Relationship to Protected Areas 6b. Legal Implications 6c. Policy Interface 6d. Decision Support Tools 6e. Concerns 6f. Alternative Values 6g. Sensitivity 6h. Pragmatic vs. Scientific 6i. Expert Opinion and Traditional Knowledge 6j. Info and Database Management 6k. Quality Control 6l. Legitimacy and Credibility 6m. Site vs. Landscape 6n. Taxa, Regions and Realms

The first five categories and 11 codes informed the development of the 17 quantitative questionnaire items (discussed further below); however, all codes in the sixth 'other' category were not linked to questionnaire items and are therefore not discussed further in the context of this thesis as it is focused on the use of mixed methods.

Coding can be seen as early theorising (Escobar, 2013) and this theorising can in part result from the comparisons and connections that can be made between and among categories and codes (Bryman, 2008). This approach enabled the identification of: (i) exemplifying quotes; (ii) areas of convergence and divergence between end-users and within end-user groups; and (iii) the emergence of conceptual and theoretical interpretations of the results. I grounded my qualitative analysis in the data, attempted to be as impartial as possible, and allowed relevant

concepts and theories to emerge. With this said, I acknowledge that the multiple roles that I held within the IUCN Task Force likely shaped my research process and the analysis of the resulting data. My qualitative data analysis approach was inductive and was informed by a grounded approach (Glaser and Strauss, 1967). I followed a set of broad guidelines on the use of a grounded approach to coding (Bryman, 2008) and discovered links to relevant concepts and theories from the data. These steps included: (i) collecting the data; (ii) coding until saturation was reached; (iii) exploring relationships between codes; (iv) testing hypotheses; and (v) linking results to broader concepts and theories.

During the time that I was coding, I withdrew slightly from direct engagement and immersion with the IUCN Task Force and the KBA process to allow more time for reflection and analysis (Blaikie, 2009; Escobar, 2013). In any case, at this stage all of the Technical Workshops had been held and the KBA process had moved into the editorial phase to prepare the first draft of the KBA Standard for the online consultation process.

My analysis of the end-user interviews helped me to determine 'what was said' and provided fine grain depth and insight about end-users' needs and concerns. I then used the emergent categories and codes to develop the online questionnaire to help further explore 'who said what' in more breadth.

4.2.3 Quantitative questionnaire

I developed a draft set of end-user questionnaire items based upon my interpretation of the most prominent and important categories and codes and the main areas of apparent convergence and divergence that emerged from the qualitative data. By targeting a larger sample size of end-users through the online questionnaire, I aimed to broaden the sample size and hence either validate or repudiate the results obtained and hypotheses developed by analysing the

qualitative interview data. I shared an initial pilot draft of the questionnaire with my practitioner partners in June 2014. The questionnaire went through several iterative edits based upon feedback received from them and from my supervisory team. Each item was carefully considered and justified in the context of both the on-going development of the KBA Standard and in relation to my research questions.

The questionnaire began by asking some optional questions regarding respondents sector of employment, institution/organisation, nationality, and country of employment. These were followed by the 17 closed-ended Likert-type items (on a five-point scale from Strongly Agree to Strongly Disagree). There was an open comment space to allow respondents to provide additional input at the end of the 17 closed-ended items. The questionnaire concluded by asking the same five open-ended questions that were posed during the end-user interviews (**Table 4.3**) to enable respondents to provide more detailed input; however, these questions were optional. We then asked if respondents would be willing to answer some follow up questions regarding the KBA Standard and if so, there was a space to provide name and email details. A section on data protection and ethics concluded the questionnaire. I had the questionnaire translated into both French and Spanish to provide it in the three official IUCN languages (End-user Questionnaire - **Appendix 4-D**).

4.2.3.1 Online questionnaire

We collaboratively developed the 17 closed-ended Likert-type ordinal response format items to measure end-users' attitudes towards particular themes that emerged from the data. The Likert-scale is a commonly used technique for measuring people's attitudes (Bryman, 2008) that was developed as a component of Rensis Likert's PhD thesis (Likert, 1932). The Likert-scale measures the intensity

of feelings about the particular area in question and is often on a five- or seven-point scale from 'strongly agree' to 'strongly disagree'. A middle position of 'neither agree nor disagree' is used to indicate neutrality on the issue/statement. Likert-type items (often incorrectly referred to as questions) must be statements and not questions per se. The original definition of a Likert-scale states that all items must relate to the same object and the aim is to obtain a sum of the responses to several Likert-items (for example, a customer satisfaction survey); however, this was not how the scale was applied in this research. For the end-user questionnaire, each item is about KBAs; however, our aim was to measure end-user opinions about specific issues and we did not attempt to assess overall opinions across items (therefore I refer to our approach as using Likert-type ordinal response format items) (Jamieson, 2004; Carifo and Perla, 2007). The 17 closed-ended Likert-type ordinal response format items are outlined in **Table 4.7**, along with the interview categories and codes that informed their development. In retrospect, there are a few things I could have designed slightly differently. I could have included an open comment space for each item to prompt further qualitative input as this may have helped to develop more nuanced understandings of end-user opinions. I could have included additional options, such as 'I don't know' or 'not applicable', to better understand what end-users' opinions were when they chose 'neither agree nor disagree' (Johns, 2005).

Table 4.7. The interview categories and codes that informed the questionnaire items.

Interview Category	Interview Code	Questionnaire Item
1. Stakeholder engagement	1a. Communication	Q16. Clear communication regarding the added value of the KBA standard is needed.
	1b. Local level stakeholder engagement	Q15. Thoughtful engagement at the local level will be essential to the effective application of the KBA standard.
2. Existing approaches	2a. Complementary or conflicting approaches?	Q1. A standardised approach to identify KBAs is needed. Q17. The KBA Standard will encourage collaboration among constituencies involved in identifying sites of particular importance for biodiversity. Q2. The KBA Standard should build upon the existing approaches used to identify sites of particular importance for biodiversity (such as Important Bird and Biodiversity Areas, Important Plant Areas, Alliance for Zero Extinction Sites and others).
3. Issues of scale	3a. Global vs. national	Q5. One global standardised approach for identifying KBAs is preferable to multiple national level approaches that identify areas of particular importance for biodiversity. Q6. A focus on KBAs may undermine national processes and priorities.
4. Implementation of the Standard	4a. Data and additional information	Q10. A lack of biodiversity data in many regions could limit the utility of the KBA Standard. Q14. KBA documentation should include additional information when available (such as information on climate change impacts, ecosystem services and socio-economic data).
	4b. Timeliness of the KBA Standard	Q12. An initial KBA database, based on currently available data, should be developed quickly in order to be immediately useful.
	4c. Resources	Q9. KBA data should be freely available for commercial use.
5. Informing decision-making	5a. Management options	Q13. KBA documentation should include management options for the site.
	5b. 'Sustainable use' vs. 'no go'	Q11. Development activities should not be permitted in KBAs.
	5c. Prioritisation	Q3. KBA data should be used to inform the prioritisation of conservation action. Q4. KBAs themselves should be priorities for conservation action. Q8. An emphasis on KBAs could hinder conservation efforts outside of KBAs. Q7. KBAs should be ranked according to relative importance for biodiversity.

4.2.3.2 Questionnaire sampling strategy

The end-user questionnaire was made available online from September 30th – November 30th 2014 (in conjunction with Round One of the global online consultation for the KBA Standard) and from September 9th – October 11th 2015 (during Round Two of the global online consultation for the KBA Standard). The consultation request(s) included a link to the end-user questionnaire and were sent out directly to over 17 500 people (**Table 4.8**), and was also likely circulated far beyond this network.

Table 4.8. Questionnaire sampling strategy.

Targeted Stakeholder Group	Size of IUCN network used
IUCN Commission Members	15 498
Representatives of IUCN Members	1 200
IUCN Councillors	33
IUCN Secretariat staff	1000
IUCN Joint Task Force on Biodiversity and Protected Areas	222
Participants from the global consultation workshops	Unknown
Private Sector	Unknown
Other informal outreach (email, social media, and word of mouth)	Unknown
Total	**17 953+**

We received 173 responses to the online end-user questionnaire, including: 75 responses during round one of the consultation and 98 responses during round two (Questionnaire Respondents, **Appendix 4-E**). The link to the end-user questionnaire was sent through IUCN network channels with additional (but difficult to track) informal outreach via email, social media, and word of mouth. This was a convenience and non-purposive sampling strategy as it took advantage of the existing outreach process related to the online KBA Standard consultation process. Snowball sampling may also have been used if/when the request was forwarded on to relevant stakeholders out with the targeted sample or when recommendations for additional networks and contacts to target were received. Interested end-users self-selected by responding to the end-user questionnaire and therefore demonstrated a certain level of existing knowledge and/or interest in the

KBA Standard and its applications. Due to a relatively low response rate from the private sector during the first round of online consultation, we specifically targeted private sector contacts during the second round. This involved reaching out through our network of companies and industry associations using existing contacts, mailing lists, social media, and other difficult to track methods. Other than this targeted private sector outreach, the same sample population was targeted during the first and second rounds of the online consultation and different people responded each time[21].

4.2.3.3 Quantitative data analysis

The analysis of the quantitative Likert-type ordinal data obtained from the online end-user questionnaire forms the deductive element of my mixed methods action research approach. As discussed above, I focused on using the quantitative data to test the concepts, theories, and hypotheses that emerged through the analysis of the qualitative interview data. This quantitative data offered the opportunity to measure end-users' opinions on particular topics related to the KBA Standard with a larger sample size. The quantitative data analysis also helped to elucidate trends, discover relationships, and develop broad theories (Gilbert, 2001) about end-users and their needs and concerns and explore/test potential differences in opinions by sector and UN Region (**Chapter 7**).

There have been on going debates about the use of Likert-type ordinal response format items and how to analyse them (Jamieson, 2004; Carifo and Perla, 2007). I adopted the view that Likert-type items produce ordinal data where the response

[21] The end-user questionnaire responses received during the first and second round were combined for the analyses found in Chapter 6 and Chapter 7. I tested for statistically significant differences between the two datasets and found that Q3, Q11, and Q14 demonstrate significant differences. As different end-users responded during each round of consultation, I do not believe that this indicates any temporal change in opinion; however, certainly something to consider when reviewing the results.

categories have a rank order but the intervals between them cannot be presumed to be equal, therefore the data should be analysed using non-parametric statistics. As such, I chose to use the Kruskal-Wallis one-way analysis of variance for non-parametric data (the parametric equivalent being a one-way analysis of variance (ANOVA)) to test for significant differences between end-user groups (by sector and UN Region). If the Kruskal-Wallis test demonstrated that there were significant differences between end-user groups, descriptive statistics (median, mode, and inter-quartile range) were then used to help determine how they differed. R (a language and environment for statistical computing and graphics (R Core Team, (2015)) was used to conduct the descriptive statistical tests and to plot the relevant graphs (Bryer and Speerschneider, 2015). This mixed use of the qualitative interview data, qualitative questionnaire data, and quantitative questionnaire data proved extremely useful for exploring end-user needs and concerns in both great depth and breadth.

4.2.4 Summative evaluation

I developed a summative evaluation to reflect on the things that went well, the things that went less well, and the things to do differently next time (Blackstock *et al.* 2007). I sent the summative evaluation to my practitioner partners as an online questionnaire in March 2016. The purpose was to enable them to reflect upon the purpose, process, outputs, and outcomes and self-assess how we engaged end-users. This summative evaluation included seven open-ended interview questions, three multiple choice questionnaire questions, and an evaluation against eight principles of good practice in international standard setting (ISEAL, 2014) (summative evaluation – **Appendix 4-F**). Although there are other forms of evaluation and other criteria against which to evaluate purpose, process, outputs, and outcomes (as discussed in **Chapter 3**), I chose this pragmatic approach and the International Social and Environmental Accreditation and Labelling (ISEAL)

Alliance principles due to their relevance to stakeholder engagement and global social and environmental standard setting.

During the Framing Workshop (IUCN, 2012b) the International Social and Environmental Accreditation and Labelling (ISEAL) Alliance, an international non-profit organisation that codifies best practice for the design and implementation of social and environmental standards, was identified as an institution that should be considered to provide support for and endorsement of the KBA Standard. In 2013, as part of my action researcher role, I spoke with ISEAL staff and consolidated the relevant good practice guidelines and principles from the ISEAL Standard Setting Code (ISEAL, 2013[22]) and shared them with my practitioner partners. These were then subsequently used to inform the design and implementation of certain components of the global stakeholder engagement process (particularly the duration and process of the online consultation and the end-user engagement process). There are 10 ISEAL Credibility Principles, 17 clauses, 46 requirements, 64 sub-requirements, and associated aspirational good practice guidance in the ISEAL Code of Good Practice for Setting Social and Environmental Standards (ISEAL, 2014). Many of these are more directly related to the broader considerations of standard setting. I compiled a set of eight principles that are directly relevant to the end-user engagement process based upon a combination of the principles, clauses, requirements, sub-requirements, and guidance. These eight principles can be grouped into three broad categories: (i) stakeholder identification; (ii) stakeholder engagement; and (iii) process transparency.

The results of the summative evaluation are discussed in both **Chapter 5** (purpose and process) and **Chapter 8** (process, outputs, and outcomes). One of the questions that I asked during the summative evaluation was about developing a set of lessons learned to inform future end-user engagement practice. My practitioner partners

[22] Version 6.0 (2014) of the ISEAL Standard Setting Code was used for the summative evaluation whereas the notes shared with the IUCN Task Force were derived from Version 5.1 (2013).

were supportive of this idea and I have used their input and the results of this thesis to develop a set of 11 recommendations, which are outlined in **Chapter 8**. Following the summative evaluation, I disengaged somewhat from my role as an action researcher to finalise my analyses and write up this thesis; however in that time, the KBA process carried on and evolved considerably. The developments that took place in response to the outcomes of this research (and that occurred both during and after I disengaged) are outlined and discussed in **Chapter 8**.

4.3 Ethical considerations

My research underwent a full ethics review at the University of Edinburgh in the early stages of the research planning process. This included completing an ethics assessment, a plain language statement, written consent, and administrative consent (Ethics Assessment, **Appendix 4-G**). Non-disclosure, confidentiality and intellectual property were discussed and appropriate actions were agreed upon through clear and transparent written and/or verbal contracts and agreements between all stakeholders, including through the Collaboration Agreement mentioned above and included in **Appendix 4-B**. An iterative approach to the ethics assessment process helped me to acknowledge and address any issues related to reflexivity, neutrality, and potential conflicts of interest as my research approach evolved. My supervisors and I also discussed and explored the potential for bias and the influence of any preconceptions to address these if/when needed. These themes were frequently revisited throughout the research process.

The end-user interviews are available in the public domain with interviewees listed as authors in Dudley *et al.* (2014), therefore anonymising interview quotes was not an obligation; however, I only refer to the institution/organisation, sector, and region of the interviewees herein as this is standard research practice. The end-user questionnaire included a section on data protection and ethics (see **Appendix 4-D**), which indicated that all efforts would be made to maintain confidentiality and

anonymity. Questionnaire respondents are therefore not named; however, their sector and UN Region are also listed in association with their responses. I have attributed quotes to my practitioner partners in relation to their responses to the summative evaluation and my participant observation notes; however, I obtained their consent to do so.

4.4 Summary

This thesis provides a description of and investigation into the purpose, process, outputs, and outcomes of engaging end-users in the development of the KBA Standard. The use of mixed methods action research has provided a multi-faceted approach to assessing end-users' needs and concerns. By interviewing a small sub-sample of end-users and then testing the resulting interpretations with a larger sample size through the questionnaire, we were able ensure that their multiple needs and concerns were documented, clarified, and (where possible) addressed. Action research is known for using a context specific combination of methods, therefore this combination of both inductive and deductive reasoning and the use of an emergent grounded approach is well matched to my choice of mixed methods action research. This approach also enabled the comparison of findings obtained from the different methods.

I began my PhD in September 2012 and since that time my worldview, research approach, and research priorities have changed considerably. Since the Framing Workshop in 2012, the KBA approach and resulting KBA Standard have also progressed and evolved a great deal. The research approach was presented chronologically here to help demonstrate how participant observation led to the interviews, which informed the development of the questionnaire, and finally led to the summative evaluation. Conversely, in the empirical chapters that follow I present the results in the most logical way for the analysis and reader (for example: (i) the outcomes of the summative evaluation that relate to the purpose and

process of engaging end-users are outlined in **Chapter 5** and those that relate to process and outcomes are summarised in **Chapter 8**; and (ii) the qualitative data is presented alongside the quantitative data in **Chapter 6**). The relationship between the empirical chapters and the different data sets is outlined in **Table 4.9**.

Table 4.9. The relationship between the empirical chapters and datasets.

Chapter	Dataset
Chapter 5 Purpose and Process	**Summative Evaluation** Qualitative Data
Chapter 6 Mixed Methods	**Interviews** Qualitative Data **Questionnaire** Qualitative Data
Chapter 7 Trends	**Questionnaire** Quantitative Data
Chapter 8 Summative Evaluation	**Summative Evaluation** Qualitative and Quantitative Data

5 Stakeholder Engagement Rationales and Typologies

End-users require information about where the most important places for biodiversity are in order to make decisions regarding safeguarding, restoring, protecting, or developing these places. In order to provide information regarding areas of importance for biodiversity, IUCN has convened a global stakeholder engagement process to incorporate perspectives from subject experts, end-users, and additional stakeholders. By examining IUCN Task Force work plan documents and KBA workshop reports and through interviews, discussions, and a summative evaluation with my practitioner partners, I examine why the IUCN Task Force decided to engage end-users in the global stakeholder engagement process and how end-users were identified and categorised. The research question that this chapter addresses is shown in **Figure 5.1**.

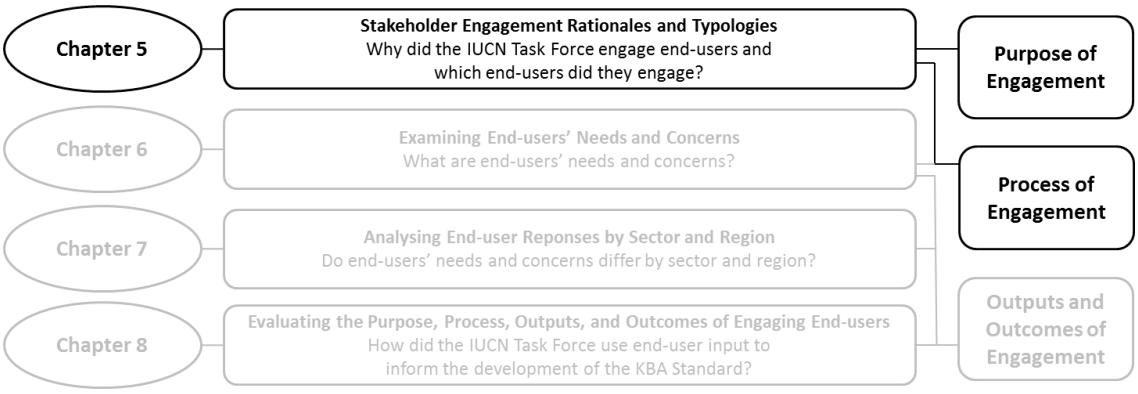


Figure 5.1. Chapter 5 research question.

5.1 Origins of the end-user engagement process

The first mention of the desire to conduct end-user interviews was in a 2011 IUCN Task Force work plan document (IUCN, 2011), which mentions an aspiration to develop a series of case studies to exemplify potential applications of the KBA Standard. A. Cuttelod also mentioned (email correspondence) that in 2011 there was no plan for a Framing Workshop. The Framing Workshop was proposed later, by a stakeholder participating in a KBA Regional Event (the International Congress for Conservation Biology (ICCB) in New Zealand in 2011) due to the diverse points of view on KBAs that were emerging around the world. A more developed mandate for the end-user engagement process resulted from the 2012 Framing Workshop, when an end-user breakout group focused on defining what end-users were and on developing a typology of end-users to target for engagement (IUCN, 2012b). One of my practitioner partners recalls the origins of the end-user process as follows:

> *"When we started the process of the development of the new KBA Standard, we thought about the various aspects of this methodology that needed to be addressed and looked into details and the "user" feedback seemed important. This was then included as a "breakout group" in the first Framing Workshop and this breakout group defined the user typology and the next steps to engage and interact with them."*
>
> A. Cuttelod (summative evaluation)

Similar IUCN stakeholder engagement processes acted as precedents and informed the end-user engagement process. During the summative evaluation my practitioner partners stated that the development of the IUCN Protected Area Definitions and Management Categories (Dudley, 2008) and the Red List Categories and Criteria (IUCN, 2001) involved some end-user engagement, but not in any systematic way. When I asked them '*were there any precedents that informed the end-user engagement process (i.e. past processes, best practice or lessons learned)?*', one responded:

> *"I think that this is the first time that IUCN has built end-user consultation explicitly into a Standard development process. The PA Management Category consolidation up to 2008 definitely engaged numerous end-users (especially through the Almeria workshop which was broadly equivalent to the Framing Workshop), and even as far back as the 1990s the development of the Red List Categories and Criteria involved at least some end-user engagement, but not, I think, in any systematic way. I'm not sure about processes beyond IUCN - I suspect that Framing Workshop participants brought precedents from elsewhere into the discussions."*
>
> T. Brooks (summative evaluation)

These quotes help to describe the origin, precedents, and evolution of the concept of an end-user engagement process. The next step that is important to examine is the purpose of the end-user engagement process, also referred to as the rationale.

5.2 Multiple and evolving rationales for engaging end-users

There are several rationales used to justify why stakeholder engagement should be a component of decision-making processes. One distinction proposed in the literature (Fiorino, 1989; Stirling, 2006) considers the differences between normative, substantive, and instrumental rationales. Stirling (2006) provides a useful means to an end analogy where:

- normative considerations relate to the democratic right of stakeholders to participate in decision-making processes as an end in itself; a focus on equality and empowerment are characteristic features of this type of motivation;
- substantive considerations focus on increasing the depth and breadth of information that informs decision-making in order to enhance decision quality as a means to an end; this is in an effort to include diverse, extensive, and context specific knowledge as well as to account for divergent values and interests; and

- instrumental considerations refer to the need to restore trust and credibility, also as a means to an end; this is related to justifying decision-making.

Stakeholder engagement efforts are often motivated or justified using one or a combination of these rationales.

The rationale for engaging end-users was not explicitly considered at the beginning of the KBA process; however, I encouraged my practitioner partners to consider our rationale for engaging end-users during the summative evaluation. I posed the question: '*which term best describes our reasons for engaging end-users (using a means to an end analogy) (Stirling, 2006)?*' They could choose from normative, substantive, or instrumental rationales and there was a space to describe other rationales and a space to provide further details if they felt that it was a blend of these options. **Table 5.1** provides a summary of their responses.

Table 5.1. The different rationales for engaging end-users.

Practitioner Partner	Normative	Substantive	Instrumental
N. Dudley		*"Actually I would say a mixture of substantive and instrumental."*	
T. Brooks	*"The primary reason was substantive - generating input into the process. Instrumental considerations were also important - strengthening legitimacy. With the clear definition from the Framing Workshop that KBAs are important for biodiversity, the normative rationale decreased in importance, as it became clear that identification of a KBA has no necessary implications for particular uses of land or water (and hence for people's lives and livelihoods). However, the normative rationale was important in development of the delineation procedures, in particular in explicit recognition of the relationship between precision of delineation and depth of local stakeholder consultation."*		
S. Woodley	*"I think there were elements of normative, substantive, and instrumental engagement in the process. We did want to learn but certainly also wanted to inform, as well as build trust."*		
A. Cuttelod		Substantive	
P. Langhammer		Substantive	

This demonstrates that, in general, my practitioner partners believe that the end-user engagement process was driven by a combination of normative, substantive, and instrumental rationales; however, they stated substantive and instrumental reasons most frequently. Normative considerations are likely to become more prominent during the implementation phase of the KBA Standard and at the national and local scale in relation to the delineation of KBAs and local stakeholder engagement. The emphasis placed on a substantive rationale is further evidenced through the content of the Framing Workshop report, which contains a sentence that summarises the aim of the KBA process, including the importance of responding to end-users needs:

> *"The aim of the current IUCN-convened process is to develop a new globally agreed standard that draws and builds on existing approaches in a way that best advances the biodiversity conservation agenda, while* ***responding to end-users needs*** *for a scientifically rigorous yet pragmatic methodology for practitioners."*
>
> IUCN (2012b: 2 – emphasis added)

The substantive aim to respond to end-users needs implies that the IUCN Task Force had/should obtain some knowledge of what these needs were/are and that they had/have an intention to respond to them. The Framing Workshop end-user typology includes a column that describes how each end-user group might use KBA data to inform their specific decision-making context. The subsequent end-user interviews built upon this by asking end-usersdirectly about their needs and concerns and how they might use KBA data in their work. Dudley *et al.* (2014) also alludes to the substantive rationale of the end-user engagement process:

> *"Given the many different stakeholders with an interest in the management of the world's remaining natural ecosystems, the IUCN...Task Force coordinated a major effort to identify and speak with a range of different existing or potential end-users of KBAs. While it has certainly not been possible to speak with everyone we would have wished to, the exercise represents an effort to* ***gain an improved understanding*** *of how different end-users view KBAs, what their hopes and concerns are, and their opinions about the methodology. These opinions have been enormously helpful in framing the KBA standard."*
>
> Dudley *et al.* (2014: 2 – emphasis added)

This demonstrates the emphasis on increasing understanding of end-users' needs, concerns, and opinions to inform the development of the KBA Standard. Dudley *et al.* (2014) also mention the importance of understanding how end-users perceive and intend to use KBA data.

> *"…while we discussed issues with end-users we did not attempt to modify their opinions, which are essential for* ***understanding how people view and intend to use KBAs****. This work has highlighted the extremely various potential uses and applications of KBAs, as well as some of the contradictory expectations of end-users. It has been extremely valuable in providing* ***insights*** *and* ***understandings*** *of the needs of end-users."*
>
> Dudley *et al.* (2014: 102 – emphasis added)

In addition to these substantive aims related to understanding and responding to end-users' needs, the Framing Workshop report also mentions the instrumental intent to seek support and endorsement from specific institutions and end-users:

> *"If this new IUCN standard is to be* ***accepted*** *and* ***disseminated****, some high-level communication is needed. A draft list of institutions was identified as useful for seeking* ***support*** *and* ***endorsement****."*
>
> IUCN (2012b: 23 – emphasis added)

A review of the Framing Workshop end-user breakout group minutes sheds further light on this instrumental motivation to engage and communicate with end-users:

> *"Tied to [the] communication strategy [is] how to **convince end-users** to actually use the product."*
>
> Framing Workshop breakout group participant (emphasis added)

During the summative evaluation, I asked my practitioner partners what they thought the purpose of the end-user engagement process was and this response exemplifies the instrumental nature of the process:

> *"…it was clear throughout that the [KBA Standard] consolidation process would be a scientific one, and that while it would be cognisant of end-user needs, it would not be driven by the needs of any one type of end-user. In addition, there was certainly a sense that an end-user consultation would **strengthen the legitimacy** of the process overall."*
>
> T. Brooks (summative evaluation – emphasis added)

This evidence supports the idea that the purpose of the end-user engagement process was mainly to improve our understanding of end-users' needs and concerns and a mix of substantive and instrumental rationales underpinned this purpose. As I mentioned above, the purpose of the end-user engagement process was not explicitly considered or communicated early in the process. As part of my action researcher role, I encouraged my practitioner partners to clearly and publicly communicate the purpose of the end-user engagement process. In response to this recommendation, Dudley *et al.* (2014) states that:

> *"The purpose of the end-user consultation has been to **seek honest opinions** from a range of different end-users, not for IUCN to influence, debate, or advocate for a particular position, nor to reach consensus. The process thus seeks and reports feedback but does not commit IUCN to implement all the ideas that emerge – this would be impossible in any case as opinions amongst end-users differ – but all issues raised have been **documented** and **will be considered** by the IUCN WCPA/SSC Joint Task Force on Biodiversity and Protected Areas to **build** and **strengthen** the process of consolidating the KBA Standard."*
>
> p. 3 – emphasis added

By the end of 2014, the purpose underpinning the end-user engagement process had been clarified and communicated. The main stated purpose of the end-user engagement process was to seek, report, document, and consider end-users' needs and concerns to build and strengthen both the KBA process itself and its application. The rationale for doing this was a blend of: (i) substantive drivers that sought to bring together different knowledge and experiences to address end-users' needs and concerns by developing appropriate solutions and by using this to inform decisions (Beierle, 2002; Blackstock *et al*., 2007); and (ii) instrumental drivers seeking to legitimise the process and justify these decisions (Reed *et al.* 2009). Although there is a recognised tension between different rationales and justifications (Lawrence, 2006), they are not mutually exclusive and being transparent about the reasons, even if/when they are plural, for engaging stakeholders is an important first step in any engagement process (Reed *et al.* 2009). Further discussion regarding the tension between these rationales and the implications of the choice of rationales can be found in **Chapter 9**.

5.3 A typology for the end-user engagement process

During the summative evaluation, my practitioner partners and I evaluated the process we used to engage end-users in relation to the literature on typologies of engagement, good practice, and evaluation. I found Rowe and Frewer's (2005) typology particularly useful as it helps to differentiate between the direction of

flow of information between the IUCN Task Force and the end-users via three categories of engagement: (i) communication; (ii) consultation; and (iii) participation (as outlined in **Chapter 3**).

In this case:

- communication involves a one-way flow of information from the IUCN Task Force to the end-users and no involvement or feedback from the end-users is sought;
- consultation involves a one-way flow of information from the end-users elicited by the IUCN Task Force; however, no formal dialogue exists between the two; and
- participation involves information being exchanged in both directions in the form of dialogue and partnership.

In my opinion (based upon the experience I gained through my mixed methods action research approach) the IUCN Task Force website, newsletters, and other outreach materials correspond well to the definition of communication, whereby information is conveyed from the IUCN Task Force to end-users (and other stakeholders). The flow of information is one-way and there is no expectation that end-users will provide any formal feedback or information. The end-user interview and questionnaire components of the engagement process correspond well to Rowe and Frewer's (2005) definition of consultation whereby information concerning end-user opinions are conveyed from the end-users to the IUCN Task Force following a process initiated by the IUCN Task Force. Some existing and potential end-users also participated in the KBA technical workshops and KBA Regional Events, which involved information being exchanged via dialogue in a two-way manner that more closely resembles participation.

Alternatively, during the summative evaluation, my practitioner partners unanimously concluded that the end-user interviews and questionnaire corresponded to the definition of participation. This is a notable, if subtle, difference in opinion, which may indicate a lack of understanding about the different processes we used to engage end-users and a tendency to assume that efforts are fully participatory when they may not be. We clearly state in Dudley *et al.* (2014) that we attempted to seek honest opinions from a range of different end-users and did not intend to influence, debate, or advocate for a specific position, nor strive to reach consensus. This indicates a form of consultation with end-users, as we attempted to elicit opinions/input rather than exchange information in both directions. Admittedly, there was some discussion and dialogue during the interviews and we did respond to the qualitative comments and questions received from end-users via the questionnaire; however, the methods we used to engage end-users would generally be classified as forms of consultation rather than participation. During a conversation with T. Brooks after the summative evaluation, he agreed with this interpretation. I have developed **Figure 5.2** to depict how I interpret our different efforts and where they lie on this typology of engagement.

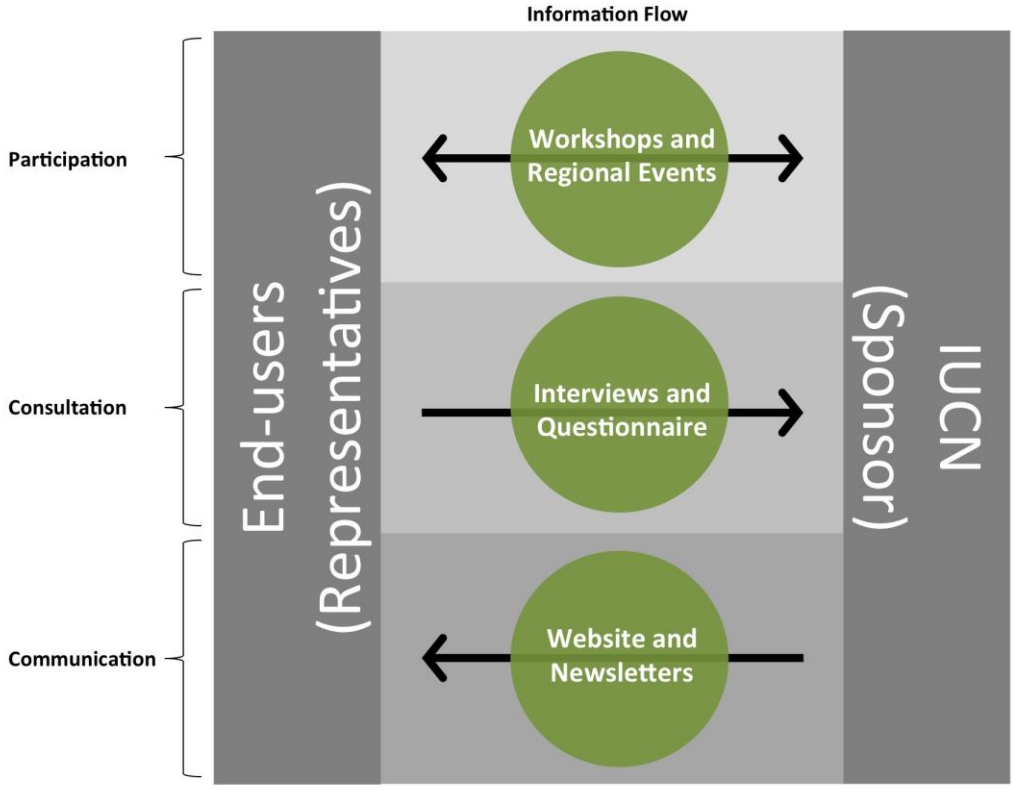


Figure 5.2. A typology of stakeholder engagement.

The end-user interviews and questionnaire were used as a way of consulting end-users. There are several different approaches we could have used and had we thought more carefully about the rationale and desired outcomes of the process prior to beginning, we may have chosen an alternative approach such as a deeper level of participation with end-users through a carefully considered and designed knowledge exchange process. Developing a clear rationale and process for engaging stakeholders is an important component of clarifying the objectives of stakeholder engagement and informs the choice of methods used to identify, categorise, and understand stakeholders.

5.4 Stakeholder analysis

Local, national, regional, and global decision-making processes increasingly incorporate a diversity of stakeholder perspectives (Reed, 2008). This is particularly relevant to the field of conservation because experts, practitioners, end-users, and stakeholders span different disciplines, sectors, and geographies. The diverse nature of the stakeholders that are involved in conservation requires mechanisms and processes that enable the combination of unique knowledge and experience towards developing solutions to complex conservation challenges. The global KBA end-user engagement process is one example of an effort to involve a diverse array of people spanning different disciplines, sectors, and regions. By eliciting and consolidating this knowledge and experience, the engagement process aimed to improve understanding of end-users' needs and concerns and use this understanding to inform decisions related to the development and implementation of the KBA Standard.

The modified version of the schematic representation developed by Reed *et al.* (2009) (**Chapter 3**, Figure 3.2) provides a practical description of the different components to consider when designing, implementing, and evaluating a stakeholder engagement process. Here I describe how the three different stakeholder analysis steps (identify, categorise, and understand) outlined in Reed *et al.* (2009) (although they did not initially inform the end-user engagement process) relate well to the identification and categorisation of end-users and how this informed the choice of methods and processes then used to understand and analyse their needs and concerns.

5.4.1 Identifying stakeholders

Step 1: The definition and typology of end-users developed by the Framing Workshop breakout group helped to identify existing and potential end-users in a

participatory way. We then asked IUCN Task Force members to suggest additional end-users to target and obtained additional recommendations through the semi-structured end-user interviews by using a snowball sampling approach.

As described in **Chapter 2**, the Framing Workshop end-user breakout group defined the term end-user and made a distinction between primary and secondary end-users. The Framing Workshop report (IUCN, 2012b) contains a decision that:

> *"There is no single audience for the process, but rather a range of **primary** end-users – those who lead or influence decision-making processes linked to mechanisms to secure biodiversity or to avoid biodiversity loss. **Secondary** users may not be decision-makers but the new approach will provide solutions to achieve their biodiversity assessment or conservation planning goals."*
>
> p. 23 – emphasis added

The Framing Workshop end-user breakout group identified a diverse array of primary end-users at both global/regional and national/sub-national scales (IUCN, 2012b) and described how each end-user group might use the resulting KBA data. This participatory end-user identification process included some existing and potential end-users. I simplified and consolidated this typology for the purposes of this thesis (**Chapter 4**, Table 4.2). We then used the definition and typology to identify end-users for the interviews using a mix of purposive, convenience, and snowball sampling approaches. We employed the use of both convenience and snowball sampling strategies for the online end-user questionnaire. Our end-user identification and sampling strategy relied heavily upon the broader global stakeholder engagement process, the IUCN network, and our own networks. This may have biased our identification and sampling strategy in some cases and we may have missed opportunities to speak to additional end-users or omitted important end-users inadvertently. This risk was identified during the end-user breakout group:

> "Although the emphasis is on those influencing decisions, it was noted that there may also be significant stakeholder or right-holder groups that are **deliberately or accidentally omitted** from decisions and yet are affected by decisions about areas of global significance. Such groups require particular consideration, including principles and codes of practice for implementation."
>
> IUCN (2012: 22 emphasis added)

In **Chapter 9**, I discuss the implications of the gaps and biases in our identification and categorisation processes further.

5.4.2 Categorising stakeholders

Step 2: The Framing Workshop breakout group and the IUCN Task Force also categorised end-users using a loose form of bottom-up reconstructive categorisation (as described in **Chapter 3**, Table 3.9), which resulted in the distinction between: (i) primary and secondary end-users; and (ii) global/regional and national/sub-national end-users. This also resulted in the categorisation of end-users from different sectors and UN Regions. We interviewed 45 end-users, from four of the five sector categories and four of the five UN Region categories. We received questionnaire responses from 173 end-users, from all five sectors and all five UN Regions. **Table 5.2** and **Table 5.3** provide an overview of the sector and UN Region categorisations of the end-users we engaged using both methods (interviews and the questionnaire, respectively).

Table 5.2. Sector and UN Region categorisations for end-user interviewees.

	Western Europe and Others Group (WEOG)	Latin American and Caribbean Group (GRULAC)	Asia-Pacific Group	African Group	Eastern Europe Group	**TOTAL**
Civil Society	9	1	3	1	0	**14**
Academia	0	0	0	0	0	**0**
National Government	6	0	0	0	0	**6**
Private Sector	14	2	0	1	0	**17**
Intergovernmental Agency	7	0	1	0	0	**8**
TOTAL	**36**	**3**	**4**	**2**	**0**	**45**

Table 5.3. Sector and UN Region categorisations for end-user questionnaire respondents.

	Western Europe and Others Group (WEOG)	Latin American and Caribbean Group (GRULAC)	Asia-Pacific Group	African Group	Eastern Europe Group	**TOTAL**
Civil Society	21	17	8	11	7	**64**
Academia	16	12	12	5	1	**46**
National Government	12	6	9	6	0	**33**
Private Sector	7	6	5	4	1	**23**
Intergovernmental Agency	5	0	1	1	0	**7**
TOTAL	**61**	**41**	**35**	**27**	**9**	**173**

We categorised interviewees by sector and UN Region to enable comparisons between and among end-user groups, as seen in Hemmati (2002) and Phillipson *et al.* (2012). The sector and UN Region categorisations also allowed us to evaluate bias and gaps in our interview and questionnaire sampling strategies so that we could adapt our approach accordingly and assess strengths and weaknesses. We also used the sector and UN Region categorisations to test our hypotheses with the quantitative questionnaire data (**Chapter 7)**.

5.4.3 Understanding stakeholders

Step 3: We investigated end-users needs and concerns through the interviews and the online questionnaire to gain an understanding of the different application contexts of the KBA Standard. This was done to identify and compare the needs and concerns of different end-users and different end-user groups to determine if there were areas of convergence and divergence in their opinions. The process and outcomes of our approach to understanding end-user needs and concerns is the focus of the forthcoming empirical chapters.

5.5 Summary

The research question that this chapter addressed is '*why did the IUCN Task Force engage end-users and which end-users did they engage*?' **Figure 5.3** provides a tailored summary of the how our consideration and use of multiple rationales relates to our stakeholder analysis approach and our choice of methods and how these relate to the outcomes and the summative evaluation.

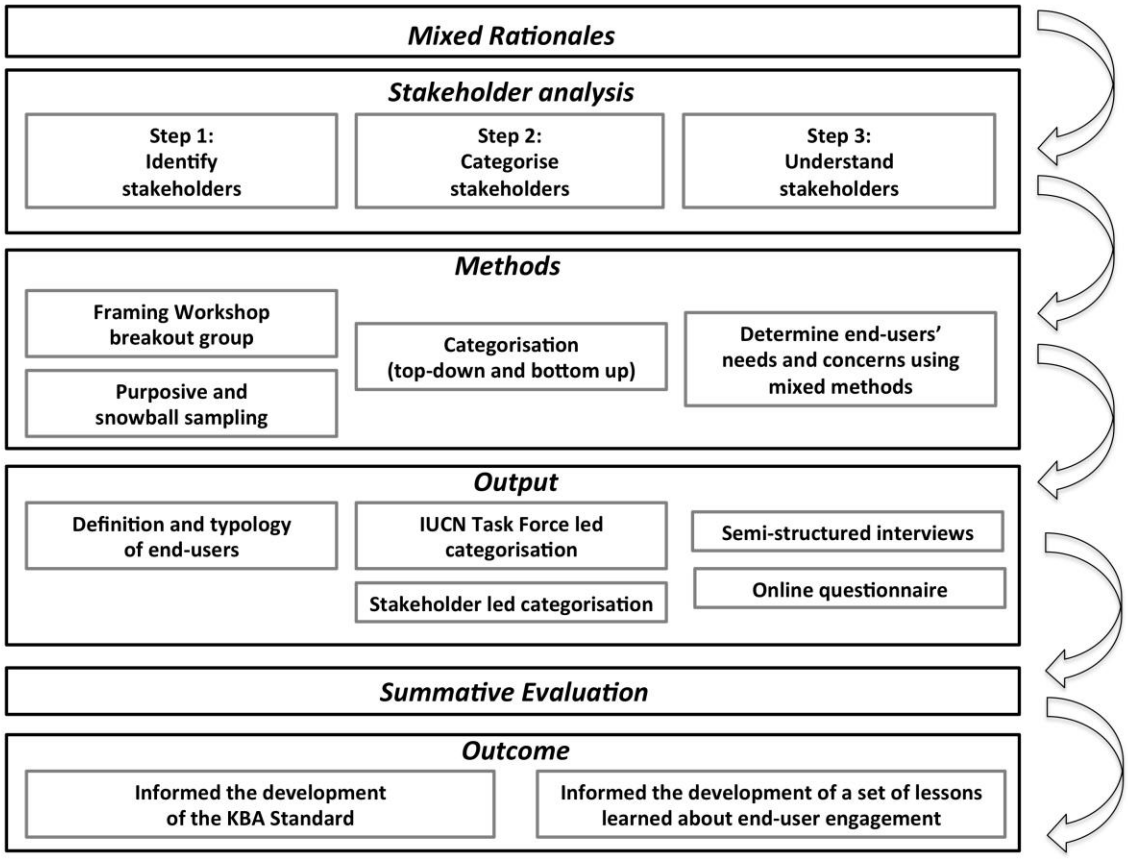


Figure 5.3. Schematic representation of the rationale, stakeholder analysis, methods, outputs, and outcomes involved in the engagement of end-users (adapted from Reed *et al.* (2009)).

The use of a blend of substantive and instrumental rationales informed how and why end-users were identified, categorised, and engaged. We defined, identified, (Step 1) and categorised (Step 2) end-users and then used a mixed methods approach to understand their needs and concerns (Step 3). The outputs of these

methods included a definition and typology of end-users, categorisation by sector and UN Region, qualitative interviews, and a quantitative questionnaire. These informed the development of the KBA Standard and were assessed using a summative evaluation with my practitioner partners.

The question that this chapter addresses may seem quite straightforward. Much of the stakeholder engagement theory emphasises the importance of understanding the rationale behind engagement efforts and systematically identifying and categorising stakeholders; however, in the practice of stakeholder engagement, time, resources, and knowledge are limited and people simply do the best that they can with the resources and knowledge that they have available. This demonstrates the gap between what we know about stakeholder engagement theory and how stakeholder engagement is conducted in practice, which I explore further in **Chapter 9**.

6 Examining End-users' Needs and Concerns

This chapter combines the qualitative end-user interview and questionnaire data with the quantitative questionnaire data to produce a synthesis and interpretation of the understanding gained about end-users' needs and concerns. The qualitative data are rich in descriptive detail and explanatory evidence related to the concepts and theories that emerged during the analysis. The quantitative data provide evidence from a larger sample size, enabling an exploration the emergent concepts in greater breadth. The research question that this chapter address is outlined in **Figure 6.1**.

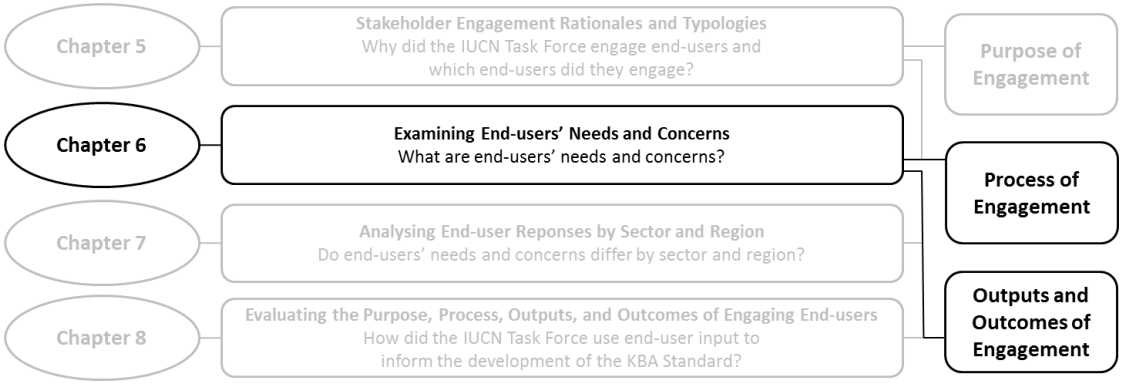


Figure 6.1. Chapter 6 research questions.

The purpose of engaging end-users was to improve our understanding of their needs and concerns and was driven by a combination of substantive and instrumental rationales. The engagement process aimed to bring together different knowledge and experiences to inform the development of the KBA Standard. End-users agreed on many of the topics; however, there were also certain topics that resulted in a divergence in opinion. This chapter explores these areas of convergence and divergence and **Chapter 8** considers how this input informed the development of the KBA Standard.

6.1 Consolidated quantitative questionnaire results

The 24 end-user interviews were complemented with an online questionnaire. We received 173 end-user responses to the questionnaire. In this section I describe the quantitative questionnaire results. **Table 6.1** lists the questionnaire items from those resulting in the highest level of convergence (top) towards increasing divergence (bottom) and includes the mode, median, and interquartile-range (IQR) for all questions.

Table 6.1. KBA online end-user questionnaire items (including mode (Mo), median (Md), and inter-quartile range (IQR)) ordered from highest level of convergence (top) towards increasing divergence (bottom) (Strongly Agree = 5, Agree = 4, Neither Agree nor Disagree = 3, Disagree = 2, Strongly Disagree = 1). Higher IQR values in bold = more divergent opinions.

#	Question	Mo	Md	IQR
Q16	Clear communication regarding the added value of the KBA Standard is needed.	5	5	1
Q15	Thoughtful engagement at the local level will be essential to the effective application of the KBA Standard.	5	5	1
Q3	KBA data should be used to inform the prioritisation of conservation action.	5	5	1
Q14	KBA documentation should include additional information when available (such as information on climate change impacts, ecosystem services and socio-economic data).	5	5	1
Q1	A standardised approach to identify KBAs is needed.	5	5	1
Q12	An initial KBA database, based on currently available data, should be developed quickly in order to be immediately useful.	5	5	1
Q2	The KBA Standard should build upon the existing approaches used to identify sites of particular importance for biodiversity (such as Important Bird and Biodiversity Areas, Important Plant Areas, Alliance for Zero Extinction Sites and others).	5	4	1
Q13	KBA documentation should include management options for the site.	5	4	1
Q4	KBAs themselves should be priorities for conservation action.	5	4	1
Q17	The KBA Standard will encourage collaboration among constituencies involved in identifying sites of particular importance for biodiversity.	4	4	1
Q10	A lack of biodiversity data in many regions could limit the utility of the KBA Standard.	4	4	1
Q7	KBAs should be ranked according to relative importance for biodiversity.	4	4	1
Q5	One global standardised approach for identifying KBAs is preferable to multiple national level approaches that identify areas of particular importance for biodiversity.	4	4	**2**
Q8	An emphasis on KBAs could hinder conservation efforts outside of KBAs.	4	4	**2**
Q9	KBA data should be freely available for commercial use.	3	3	**2**
Q11	Development activities should not be permitted in KBAs.	2	3	**2**
Q6	A focus on KBAs may undermine national processes and priorities.	2	3	**2**

As demonstrated by the IQR values in **Table 6.1**, Q5, Q8, Q9, Q11, and Q6 resulted in the highest level of divergence in opinion between end-users. **Figure 6.2** provides an overview of the 173 responses to the 17 closed-ended Likert-type items. Items are again ordered from higher levels of convergence (top) towards increasing divergence (bottom).

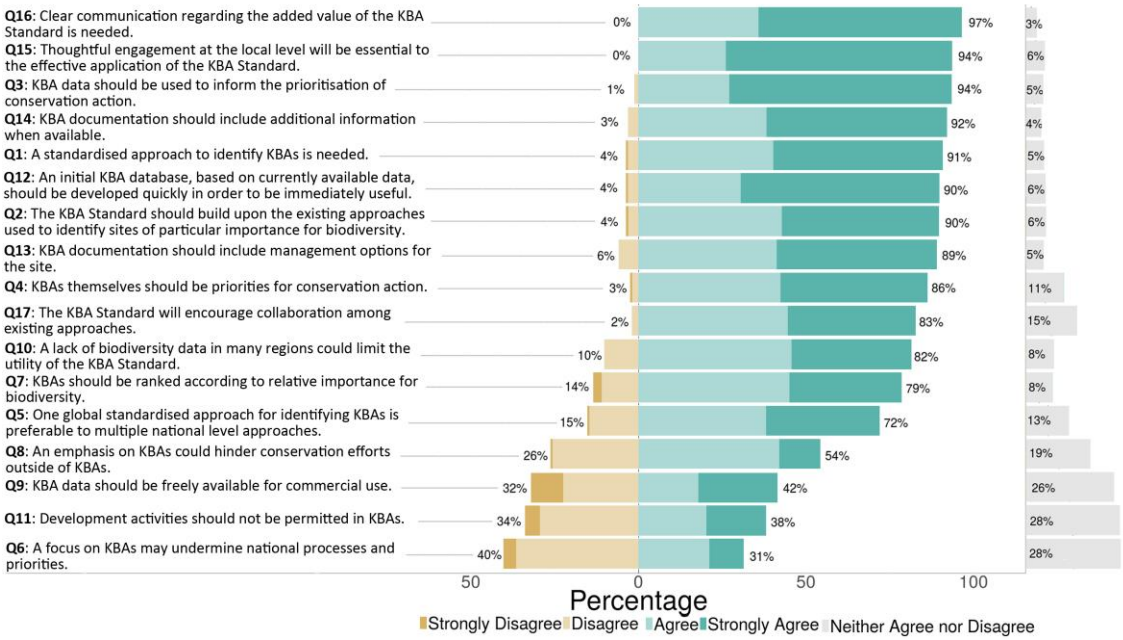


Figure 6.2. Overall responses to the online end-user questionnaire ordered from higher levels of convergence (top) towards increasing divergence (bottom). Percentages are for consolidated disagree, agree, and neither agree nor disagree, respectively from left to right.

As outlined in **Table 6.1** and depicted in **Figure 6.2,** end-users overwhelmingly agreed on items Q1, Q2, Q3, Q4, Q7, Q10, Q12, Q13, Q14, Q15, Q16, and Q17; whereas, items Q5, Q6, Q8, Q9, and Q11 highlight topics where there is divergence in end-user opinion. These areas of convergence and divergence in end-user opinion are explored in more detail using the qualitative interview data below. For simplicity, throughout the remainder of this chapter, when I refer to 'disagree' this is a consolidation of 'disagree' and 'strongly disagree' and 'agree' is a consolidation of 'agree' and 'strongly agree'.

6.2 Exploring diverse end-user perspectives using mixed methods

In this section, I combine the qualitative and quantitative data to further explore these topics. I provide exemplifying quotes alongside the percentage of end-users who either agreed or disagreed with the questionnaire items to help support the analysis and interpretation of the results. The quotes that are derived from the end-user interviews and can all be found in Dudley *et al.* (2014). I also include quotes from the qualitative questionnaire responses.

The global stakeholder engagement process progressed and evolved considerably throughout the duration of this research. The process was a moving target, which presented timing challenges in relation to analysing and writing up the results (particularly the outcomes). The ways in which each of the emergent topics examined in this chapter were subsequently integrated and/or addressed during the development of the KBA Standard are therefore discussed and analysed further in **Chapter 8** (Section 8.2.2).

6.2.1 Stakeholder engagement

There were several end-user comments related to stakeholder engagement, which were mainly associated with the topics of communication or local level stakeholder engagement.

6.2.1.1 Communication

The need for simple and clear communication outreach materials and capacity building (at global, regional, national, and local levels) was often mentioned during the interviews. One end-user emphasised that:

"Outreach and capacity building materials would help raise awareness regarding what KBAs are, why they are important and would lead to improved understanding of the value of these areas. This information must be presented in a coherent and accessible way."

Grupo Jaragua (interview)
Civil Society, Latin American and Caribbean Group

Other end-users expressed the importance of communicating the objectives, intended use, and added value of the KBA approach.

"The communication should be very clear what KBAs are and are not."

Questionnaire respondent
Civil Society, Asia-Pacific Group

"The added value of KBAs must be clearly communicated."

Ecologically and Biologically Significant Areas (interview)
Intergovernmental Organisation, Western Europe and Others Group

These end-user statements about the need for clear communication, particularly concerning the added value of the KBA Standard, informed the development of the online questionnaire item **Q16** that stated '*clear communication regarding the added value of the KBA Standard is needed*'. A large majority (97%) of the end-user questionnaire respondents agreed with this statement. This confirms that the requests for clear communication about the added value KBA Standard that emerged from the interviews are shared by wide number of end-users. Stakeholder engagement and communication are important topics for the IUCN Task Force to consider and will continue to be important components of the on-going development and implementation of the KBA approach.

6.2.1.2 Local level stakeholder engagement

Several end-user interviewees emphasised the importance of engagement with national governments, local partners, and other local stakeholders. One end-user stated that:

> *"Land-use options for KBAs need to involve upfront and participatory discussion with stakeholders, given the potential implications of strict conservation designation if countries decide to confer protected status to one or more KBAs."*
>
> Mining and Metals (interview)
> Private Sector, Western Europe and Others Group

Another end-user emphasised the need to consider local needs and expertise:

> *"It will be essential to consider implementation needs at the local level as well as how to ensure consistency at this scale…this will be particularly important when working within jurisdictions where local experts have the best knowledge of the area."*
>
> NatureServe (interview)
> Civil Society, Western Europe and Others Group

In response to end-user interviewee statements about the need for local stakeholder engagement, the online questionnaire item **Q15** stated '*thoughtful engagement at the local level will be essential to the effective application of the KBA Standard*'. A large majority (94%) of the end-user questionnaire respondents agreed with this statement. A different perspective was offered by an end-user who, in response to **Q15**, indicated that it is important to define who exactly we mean by local level stakeholders and at what point in time they are engaged:

> *"Local stakeholders that can be everything and anything […] if you mean mobilising local expertise to assess the suitability of an area for biodiversity I 'Agree'. If it is introducing socio-economic and political players into the process who know nothing about the matter but will deflect the evaluation based on local socio-economic interests I 'disagree'. It is not at this level they should intervene, the assessment must be biologically relevant (which will be hard enough), and then, outside [the] KBA process, the relevance and applicability of local level stakeholder engagement can be up for discussion.*[23]*"*
>
> Questionnaire respondent
> Academia, Western Europe and Others Group

The combined qualitative and quantitative results corroborate and indicate that the KBA process going forward should carefully consider how best to engage local stakeholders to ensure the effective and just application of the KBA Standard. This will likely be one of the hardest elements of the implementation of the KBA Standard as it requires careful consideration, capacity building, and negotiation in a variety of different contexts (political, economic, social, and environmental) and involves diverse values and stakeholders. All forms of stakeholder engagement will be important, including: communication, consultation, and participation.

6.2.2 Existing approaches

The first questionnaire item (**Q1**) stated *'a standardised approach to identify KBAs is needed'*. This item was included to gauge whether end-users believed that the KBA Standard was necessary. A large majority (90%) of the end-user respondents agreed that a standardised approach to identify KBAs is needed. This provided a good indication that the continued development and implementation of the KBA Standard is supported by the end-users who responded.

Many end-users commented on the relationship between existing approaches[24] and the KBA Standard. These comments can be split into two broad perspectives, those

[23] Translated from French to English by author.
[24] Existing approaches include those listed in **Chapter 2** (Table 2.1).

referring to KBAs as: (i) complementing existing approaches (also referred to by end-users as unifying, harmonising, consolidating, standardising, reinforcing, supporting, collaborating, cooperating, unifying, informing, or validating); or (ii) conflicting with existing approaches (also referred to by end-users as confusing, competing, duplicating, adding, repeating, replicating, or overlapping).

6.2.2.1 Complementing existing approaches

The initial WCC 2004 Resolution 3.013 mandate for the consolidation of the KBA standard was explicit that this should be done by building on existing approaches (as outlined in **Chapter 2**). End-users emphasised the importance of and need for close cooperation to ensure that existing approaches align with one another. End-users also noted the importance of communicating that this complementarity and alignment does not equate to the KBA approach replacing existing approaches. Others, mainly the private sector, specifically indicated the need for one unified system to inform decision-making. One end-user summarises these perspectives by stating that:

> *"KBAs can easily be applied with existing procedures…and must be acknowledged as being complementary, rather than replacing other efforts. It is very important that this complementarity is articulated, as in most countries there have been past conservation target setting efforts and KBAs should be seen as building on these, rather than replacing them."*
>
> Pacific Region (interview)
> Civil Society, Asia-Pacific Group

One end-user stated that the KBA Standard should encourage collaboration across borders through networks that can support one another. Another indicated the importance of working towards galvanising the global conservation science community, who can often be disparate, to encourage new approaches to collaborations, data integration, and knowledge management. Other end-users

remarked that KBAs can: (i) provide a gap analysis for existing policy designation approaches; (ii) identify candidate sites for policy designation approaches; (iii) confirm the value of designated sites or newly nominated sites; and (iv) provide additional arguments, political justification, and recognition for existing traditional governance and management regimes.

In response to the end-user interview comments related to the potential for complementarity or collaboration **Q17** stated that: *'the KBA Standard will encourage collaboration among constituencies involved in identifying sites of particular importance for biodiversity'*. The majority (83%) of the end-user questionnaire respondents agreed with this statement.

In fact, several end-user interviewees suggested ways in which they would like to collaborate and/or integrate KBAs in their policies and procedures. I included these in an interim summary report that I shared with the IUCN Task Force in July 2014.

6.2.2.2 Conflicting with existing approaches

End-user interviewees also stated concerns about KBAs potentially duplicating efforts, providing conflicting advice, confusing the landscape of approaches, and competing with existing approaches and/or legislation. One end-user indicated that, from a funding perspective, a proliferation of categories of important sites for biodiversity makes their job more confusing and another warned of the risk of simply developing one more competing tool amongst many. Other end-users stated that KBA data should be consistent and comparable with information gathered through existing processes and should build upon, and not undermine, past progress in identification and the development of associated conservation actions. One end-user warned that:

> *"There is a risk of creating confusion for policy makers by adding an additional scheme that claims to define the (globally) most important areas for biodiversity which might not fully correlate with European priorities. With well managed communication and a clear KBA concept for Europe, this could be handled but one must be aware of the inherent danger of undermining ongoing site related conservation efforts."*
>
> European Commission and the European Environment Agency (interview)
> National Government, Western Europe and Others Group

Another end-user was concerned that:

> *"…the process will simply result in another tool that will have to compete with the application of existing processes…further complicating the work of end-user groups rather than simplifying."*
>
> World Bank Group (interview)
> Private Sector, Western Europe and Others Group

Some end-users (and particularly those responsible for maintaining existing approaches) requested clarity regarding how existing sites that do not meet the new global thresholds will be recognised and presented:

> *"KBA are (could be) an effective tool for prioritisation of global, regional and local conservation effort. However, it will serve this way only if [it] integrate[s] all the existing approaches and structures (as BirdLife's IBAs) and frame[s] it in a common structure - it means, no currently identified area in any such scheme should be omitted. Otherwise there is a great risk of destabilising current functioning structures, like the European Union's Natura 2000 network (based on BirdLife's IBAs)."*
>
> Questionnaire respondent
> Civil Society, Eastern Europe Group

This quote exemplifies the comments that end-users made about KBAs either complementing or competing with existing approaches. In response to these end-user comments **Q2** stated that: *'the KBA Standard should build upon the existing approaches used to identify sites of particular importance for biodiversity (such as*

Important Bird and Biodiversity Areas, Important Plant Areas, Alliance for Zero Extinction Sites and others)'. The majority (89%) of the end-user questionnaire respondents agreed with this statement. This high level of convergence in opinion about the ability of the KBA approach to encourage collaboration and the need to build upon existing approaches has been one of the underlying motivations of the global stakeholder engagement process. By engaging with stakeholders from existing approaches and aligning the KBA Standard as closely as possible and addressing their needs and concerns (where possible), the IUCN Task Force has attempted to limit the possibility of conflict and duplication of efforts and to maximise complementarity. This has been a challenging process because the KBA Standard (particularly the criteria and thresholds) aims to be scientifically robust and empirically driven and some sites will therefore inevitably not qualify as KBAs. This represents a challenge that is closely linked to the theoretical difference between 'Mode 1' and 'Mode 2' knowledge production introduced in **Chapter 3** and is something that is discussed further in **Chapter 9**.

6.2.3 Issue of scale

End-user interviewees frequently mentioned issues related to the identification of KBAs of global vs. regional/national significance.

6.2.3.1 Identification of KBAs of global, regional, and national significance

During the interviews end-users commented on and questioned the differences between sites of global importance and sites of regional/national significance. Many end-users, particularly those involved in natural resource and development land-use decision-making, indicated that they required information about sites of national importance as well as sites of global importance to inform their decision-making. Others indicated that they needed guidance on how to bridge global KBA data to local contexts. There were also concerns raised about the fact that the

global focus of KBAs: (i) might undermine national priorities; (ii) may be perceived as top-down; and (iii) may result in a lack of interest or engagement at the national and/or sub-national level. One end-user stated that:

> *"While [a] global approach is desirable for broad decisions, national KBAs will be useful for specifics - because important areas could lose out in global KBAs due to [a] myriad [of] challenges (eg: poor data, lack of cohesion among stakeholders locally, interferences from powerful groups contributing to biodiversity loss etc.)"*
>
> Questionnaire respondent
> Civil Society, African Group

Conversely, some noted that KBAs could add validation and attention to existing national level sites due to the involvement of IUCN:

> *"…KBAs help to add more weight to particular sites when communicating with environmental authorities, particularly with the 'endorsement' provided by the IUCN, as they are not only of local importance but also of global importance."*
>
> Grupo Jaragua (interview)
> Civil Society, Latin American and Caribbean Group

Another end-user also explicitly stated that the process should only be based upon global criteria and should not consider national level policies/contexts:

> *"The process should prioritise global requirement[s] and [should] not depend [on] national policies."*
>
> Questionnaire respondent
> Academia, Latin American and Caribbean Group

To gain an improved understanding of these diverse perspectives on the topic of global vs. regional/national scale KBAs, **Q5** and **Q6** stated, respectively: '*one global standardised approach for identifying KBAs is preferable to multiple national level approaches that identify areas of particular importance for biodiversity*' and '*a focus on KBAs may undermine national processes and priorities*'. Many end-user

questionnaire respondents agreed (73%) that a global approach was preferable and a small majority of the end-user questionnaire respondents disagreed (40%) (fewer agreed (33%) and a high number 'neither agreed nor disagreed' (28%)) that a focus on KBAs would undermine national processes and priorities. This suggests that a majority of the end-users that responded believe that a global consolidated standard is preferable to multiple national level approaches and that a small majority are not concerned that the KBA Standard might undermine national processes and priorities.

6.2.4 Implementation of the Standard

End-users often spoke about concepts linked to the implementation of the KBA Standard, including comments related to: (i) data and information; (ii) timeliness; and (iii) resources.

6.2.4.1 Data and additional information

End-users frequently commented upon a broad range of opportunities and challenges related to data and information. The main emergent topics that are explored in this section relate to comments on a lack of data and the provision of additional information.

6.2.4.1.1 Data availability

Many end-users shared their concerns about the lack of available data to inform the identification of KBAs. They expressed that the lack of available data could: (i) prevent an important, yet unknown or low data, area from being recognised; (ii) distort results towards known areas (such as data rich sites, species, or realms); and (iii) result in the KBA Standard being implemented inconsistently. As one end-

user stated, this can be particularly problematic for areas where data availability is, and will likely remain, low:

> *"If people feel as though an area can only be protected once quantitative data is obtained and thresholds are reached then this becomes very problematic for the oceans where data availability is, and will likely remain, low."*
>
> Ecologically and Biologically Significant Areas (interview)
> Intergovernmental Organisation, Western Europe and Others Group

Another end-user stated that:

> *"The lack of comprehensive and recent data on threatened species to use as a basis for KBA identification is a limitation…Some people have referred to KBAs as 'Known Biodiversity Areas' as they often simply identify the areas for which good data are available, and omit less well known areas."*
>
> Pacific Region (interview)
> Civil Society, Asia-Pacific Group

These concerns about the lack of available data informed the development of the online questionnaire item **Q10**: '*a lack of biodiversity data in many regions could limit the utility of the KBA Standard*'. The majority of the end-user questionnaire respondents agreed (82%) with this statement, which indicated that this was an important topic for the IUCN Task Force to consider further.

6.2.4.1.2 Additional information

End-users also expressed the need for the inclusion of additional information to help inform their decision-making. This included requests for information on ecosystem services, phylogenetic diversity, connectivity, climate change, vulnerability, socio-economic data, legal protection, and other additional information. Other end-users urged the KBA approach to also include other values

and traditional ecological knowledge. The following quotes help to exemplify these perspectives:

> *"KBAs also need to be viewed within a development planning framework, which includes use of socio-economic data - so that, for example, associated data on ecosystem services would be particularly valuable, particularly services related to poverty alleviation and sustainable livelihoods."*
>
> United Nations Development Programme (interview)
> Intergovernmental Agency, Western Europe and Others Group

> *"The KBA approach does not have to tell us everything, however, additional comments and qualitative information (such as: the level of development in the area, management plans, legal protection, distribution ranges, migration routes) would be very helpful."*
>
> Oil and Gas (interview)
> Private Sector, Western Europe and Others Group

> *"There must be a clear link made between biodiversity and other values. The following questions should be posed: Whose values? Can we reach agreement on a set of values? Why are these important? Who do they belong to? How will working in this area safeguard these values? By asking these questions and seeking agreement the KBA approach would be in a stronger position to manage trade-offs, meet multiple objectives and achieve safeguarding of agreed upon common values."*
>
> The Nature Conservancy (interview)
> Civil Society, Asia-Pacific Group

These requests for the inclusion of additional information led to the development of **Q14**: '*KBA documentation should include additional information when available (such as information on climate change impacts, ecosystem services and socio-economic data)*'. A large majority (92%) of the end-user questionnaire respondents agreed with this statement.

6.2.4.2 Timeliness of the KBA Standard

Many end-users shared concerns that it would take too long to finalise and agree upon the KBA approach. A related concern was that we are rapidly losing important places for biodiversity, particularly in countries with weak land-use planning processes and that if the development and implementation of the KBA Standard takes too long that most major development decisions will already have been made. They noted that it would be important for the KBA Standard to be iterative and to immediately begin working with existing biodiversity data:

> *"There is a need for a quick way to inform the state and the public that a particular place is important and should be safeguarded. There is a need to act with existing information, however incomplete it may be."*
>
> Grupo Jaragua (interview)
> Civil Society, Latin American and Caribbean Group

These comments about timing led to the development of **Q12**: *'an initial KBA database, based on currently available data, should be developed quickly in order to be immediately useful*'. A large majority (91%) of the end-user questionnaire respondents agreed with this statement.

6.2.4.3 Cost of identification and management of KBAs

A number of end-users commented on the resources needed to develop, implement, manage, and maintain KBA data. Many requested that the data be freely available and accessible to all institutions and sectors:

"Cost is an important factor for banks, and at least the basic data should be available for free to all institutions and sectors."

Commercial Banks (interview)
Private Sector
Western Europe and Others Group,
Latin America and Caribbean Group,
African Group

End-users also discussed challenges related to securing funding and resources. One end-user with national level KBA assessment experience commented on the fact that considerable effort and funds are required to undertake a KBA assessment and that these should not be underestimated. End-users stated that because resources are so limited, the KBA approach must demonstrate clear added value and conservation outcomes to justify expenditure on the identification of KBAs (linking back to **Q16** on added value discussed above). Another end-user mentioned concerns about the IUCN's capacity and resources to coordinate the implementation and management of the KBA Standard following its launch. One end-user summarises these perspectives well by stating:

"I think a consistent standard is needed but there are parallel needs for increased resources for data collection and capacity building… [We need a] global KBA database which is free and accessible online, and kept updated, with all documentation (e.g. what triggered each KBA, process of delineation, any associated information)."

Questionnaire respondent
Civil Society, Western Europe and Others Group

These perspectives on resource challenges resulted in the development of **Q9**: '*KBA data should be freely available for commercial use*'. A small majority of the end-user questionnaire respondents agreed (42%) that KBA data should be made freely available and slightly fewer disagreed (32%). This suggests that end-user questionnaire respondents are quite evenly split on the issue of 'who pays'; however, a small majority believe that KBA data should be freely available for commercial use. This presents a dichotomy where end-users want the data to be

available quickly but they also want it to be freely available despite the limited resources available. The cost of developing, managing, and maintaining a KBA database will be high.

6.2.5 Informing decision-making

Comments concerned with how KBAs inform decision-making emerged very clearly from the end-user interviews and mainly related to: (i) management options; (ii) sustainable use; and (iii) prioritisation. These concepts are explored further in this section.

6.2.5.1 Management options

End-users requested that details regarding management options[25] for KBAs be included in KBA documentation. Conversely, another end-user stated that the inclusion of management options would not be feasible at this scale or with this type of approach. The following end-user quotes highlight the desire for management options to be included in the KBA documentation:

> *"KBA documentation should include management options for a given site so it is clearer how KBA designation might help existing protected areas that are not being managed well."*
>
> Questionnaire respondent
> Academia, Western Europe and Others Group

> *"There should be…management options in the KBAs when there appears [to be] a conflict of interest between local needs and biodiversity protection."*
>
> Questionnaire respondent
> Academia, Asia-Pacific Group

[25] Management options: different forms of management that may be useful or appropriate for achieving certain conservation objectives.

These comments regarding management options informed the development of **Q13**: '*KBA documentation should include management options for the site*'. A large majority (90%) of the end-user questionnaire respondents agreed with this statement.

6.2.5.2 Sustainable use or strict protection?

One clear area of divergence in opinion between end-users that emerged from the interviews was whether sustainable use should be allowed in KBAs or, conversely, if KBAs should be strictly 'no go'[26] for development activities. Some end-users mentioned concerns that KBAs may become 'no go' areas for development. The concept of permitting sustainable use in KBAs was also mentioned by several end-users. One private sector end-user stated concerns:

> *"That KBAs may become or are advertised as 'no go' areas for development. KBAs should help to identify areas of high biodiversity importance that need to be safeguarded, but should not be prescriptive of the management actions. Action plans can then be put in place to ensure that oil and gas activities in or near KBAs are managed to avoid and minimise any potential impact. Otherwise, the KBA approach may be counterproductive, and may not get the support it needs from governments and other stakeholders."*
>
> Oil and Gas (interview)
> Private Sector, Western Europe and Others Group

These comments informed the development of **Q11**: '*development activities should not be permitted in KBAs*'. A very small majority of the end-user questionnaire respondents agreed (38%) that development activities should not be permitted in KBAs and fewer disagreed (34%). This suggests that the end-user questionnaire respondents are almost evenly split on the issue of whether development activities should be permitted in KBAs; however, a small majority believe that they should

[26] 'No go' for development is a term that is commonly used to refer to decisions related to limiting human activities in particular areas of importance for biodiversity (also referred to as 'no-go').

not be permitted. I explore this strong divergence in end-user opinion further in **Chapter 7** and **Chapter 8**. This is an important issue and demonstrates that some end-users want to ensure that the implementation of the KBA Standard does not result in strict prescriptive land-use restrictions, while others see the KBA approach as playing a role in restricting development in and around important places for biodiversity. The debate between sustainable use and strict protection has been on-going for decades (the concept of sustainable use (or 'sustainable utilisation') first appeared globally in the World Conservation Strategy (IUCN, 1980), and this has proven one of the more difficult topics to integrate and address in the context of the development of the KBA Standard. This is discussed further in **Chapter 8**.

6.2.5.3 Prioritisation

The topic of prioritisation was prominent during the analysis of the interviews. One end-user stated that the urgency of action required in conservation inevitably requires prioritisation between sites and different land-uses. By contrast, another end-user stated that:

> *"KBAs should not be seen as a direct conservation prioritisation tool. The data and information can be used by end-users as appropriate and should be seen as a knowledge product and not a policy instrument. Information can then be used in the policies of end-users as needed."*
>
> Oil and Gas (interview)
> Private Sector, Western Europe and Others Group

However, other end-users explicitly stated that they already do use or plan to use KBA information to inform prioritisation.

> *"UNDP uses KBAs and sees them as an important proxy for biodiversity, particularly in data-poor countries, by providing a spatially explicit method of priority-setting."*
>
> United Nations Development Programme (interview)
> Intergovernmental Agency, Western Europe and Others Group

To better understand these concerns, two questionnaire items were developed, **Q3**: '*KBA data should be used to inform the prioritisation of conservation action*' and **Q4**: '*KBAs themselves should be priorities for conservation action*'. The majority of end-users who responded to the online questionnaire agree (94%) that KBA data should inform prioritisation; a smaller majority (86%) also agree that KBAs should themselves be priorities for conservation action. This is a notable level of convergence of opinion given the divergent end-user opinions about prioritisation that were obtained through the interviews. However, if we look solely at the questionnaire responses this divergence in opinion is not apparent, which demonstrates the different inferences and interpretations that can be made from different methods.

6.2.5.3.1 Areas outside KBAs

End-users stated concerns regarding the status of areas outside KBAs. Some felt as though a site that is not a KBA would be very difficult to conserve and that an emphasis on KBAs could reduce the attention given to other aspects of conservation.

> *"I think [a] global standard for identification of important sites for biodiversity is necessary. However […] the communication of KBA should not give [the] connotation that areas outside KBAs are not biodiversity-significant."*
>
> Questionnaire respondent
> Civil Society, Asia-Pacific Group

Some end-users were concerned that areas outside KBAs would be viewed as being less important and therefore open to being freely developed:

> *"More guidance is needed on the way in which nature outside KBAs is supposed to be viewed: does KBA analysis mean (or can it be interpreted as meaning) that anything outside a KBA is open for development?"*
>
> World Heritage Sites (interview)
> Intergovernmental Agency, Western Europe and Others Group

Conversely, one private sector end-user quote substantiates this concern by stating that they would use the KBA Standard in order to better understand where development safeguards could be less strictly applied:

> *"This means that the KBA standard must also differentiate significant sites from the rest of the landscape where the application of safeguards results in fewer mitigation measures."*
>
> World Bank Group (interview)
> Private Sector, Western Europe and Others Group

These end-user comments about areas outside KBAs informed the development of **Q8**: '*an emphasis on KBAs could hinder conservation efforts outside KBAs*'. More than half of the end-user questionnaire respondents agreed (56%) that an emphasis on KBAs could hinder conservation efforts outside KBAs and fewer disagreed (25%). This suggests that many of end-users think that conservation efforts outside of KBAs may be hindered by the KBA approach.

6.2.5.3.2 Ranking

End-user interviewees expressed differing opinions about whether KBAs should be ranked according to relative importance to biodiversity. Some end-users expressed strong opposition to the idea:

"Do not under any circumstances rank KBAs […] This is a value judgement […] e.g. Importance based on what criteria? […] The KBAs are most likely to be useful if they are strictly ecologically based, and can then be incorporated into planning and decision processes […] Explicit prioritisation at the scale of a decision is much more important and scientifically defensible than arbitrary rankings […] based on e.g. the number of qualifying species - there are a lot more things that should go into an assessment of "importance"."

Questionnaire respondent
Academia, Asia-Pacific Group

"From a CEPF perspective the binary system is effective and important – i.e. a site clearly is a KBA or it is not – rather than having a greyscale system that includes halfway stages or different 'levels' of KBA. This is admittedly less nuanced but important when dealing with users who are not biologists or planners."

The Critical Ecosystem Partnership Fund (interview)
Private Sector, Western Europe and Others Group

Other end-users expressed a precise need to rank different KBAs.

"Tiering of KBAs (such as Tier 1 and 2) to distinguish between, the very exceptional sites in terms of irreplaceability and vulnerability (e.g. AZEs) from those that are also important priority sites, but where conservation might be less urgent due to spatial alternatives in the landscape and/or less threat."

World Bank Group (interview)
Private Sector, Western Europe and Others Group

Some end-users expressed concerns about how ranking would be defined, perceived, interpreted, and updated. One end-user brought up concerns regarding how additional information would be used to inform ranking (such as cultural values, traditional ecological knowledge, climate change, evolutionary data, and socio-economic data). Two other end-users stated that if sufficient additional information is provided then end-users could rank sites based on their own set of criteria for certain types of priorities or create different zones within KBAs. A different form of ranking or categorisation was also proposed to distinguish between confirmed KBAs, provisional KBAs, and KBAs where data are out-dated.

This divergence in opinion led to the development of **Q7**: '*KBAs should be ranked according to relative importance for biodiversity*'. The majority of the questionnaire respondents agreed (79%) with this statement. This is an interesting outcome as opinions on ranking of KBAs seemed very divergent based upon the interview data, yet the quantitative data does not show this as much as might have been expected.

6.3 Summary

This chapter demonstrates how the use of a mixed methods approach helped us to determine and understand end-users' needs and concerns in great depth and breadth. The focus on the main emergent topics examined in this chapter can be viewed as an initial form of 'knowledge mapping' or 'conflict mapping', which are tools used to understand and categorise diverse perspectives in stakeholder analysis (Reed *et al.* 2009). The research question that this chapter addresses is '*how did the IUCN Task Force engage end-users and what did they learn about end-users' needs and concerns?'* The high level of convergence in opinion for many of the topics (and for the most part between the results obtained from the two methods) provides a good level of corroboration and certainty for these findings and suggests that these are areas of broad consensus (i.e. Q1, Q2, Q3, Q4, Q7, Q10, Q12, Q13, Q14, Q15, Q16, and Q17). The four main areas of divergence in opinion were related to the issue of scale, prioritisation, costs, and informing land-use decision-making (i.e. Q5, Q6, Q8, Q9, and Q11, respectively); this indicates that these are the topics in need of further analyses, consideration, and engagement. These areas of divergence in end-user opinion relate to concepts and debates that reach beyond the context of the KBA Standard and can be found in many discussions about conservation, land-use, and resource management. I explore and interpret these main areas of divergence in opinion by categorising and subsequently analysing responses by sector and UN Region in **Chapter 7** and explore how the process, outputs, and outcomes of engaging end-users have informed the development of the KBA Standard in **Chapter 8**.

7 Analysing End-user Responses by Sector and Region

The preceding chapters have described and analysed the purpose, process, and some of the outputs related to engaging end-users. This chapter investigates the outputs further by testing two hypotheses to identify whether there are trends in end-user responses based upon their sector and UN Region categorisations. The research question that this chapter addresses is shown in **Figure 7.1**.

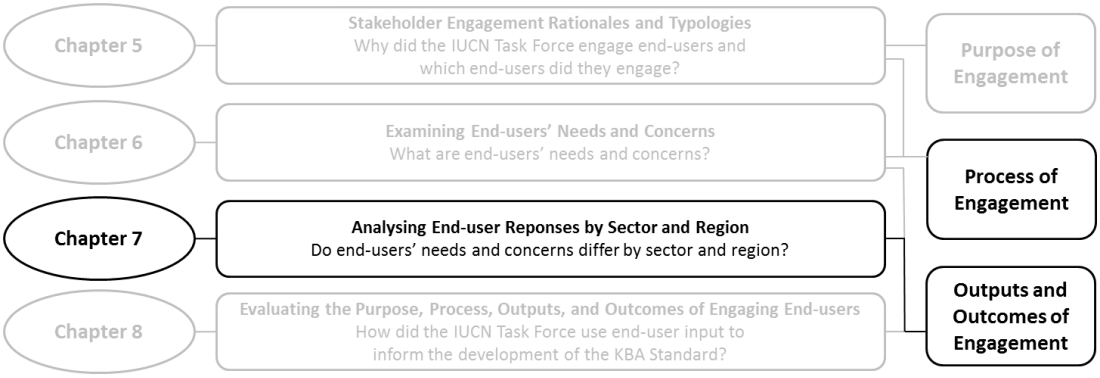


Figure 7.1. Chapter 7 research question.

7.1 Developing hypotheses about end-users' opinions

My practitioner partners and I developed two hypotheses about end-user groups following the initial analysis of the interviews in Dudley *et al.* (2014). These were based upon an assumption we made that opinions were likely to be shared within end-user sector and UN Region groups. The online questionnaire was developed, in part, to test our hypotheses with a larger sample size of end-users. We wanted to test if and/or how end-user opinions varied between and within sectors and UN Regions to better understand the areas of divergence in opinion that emerged from

the interviews. We developed two hypotheses about end-user groups (H_1 indicates the alternative hypotheses and H_0 indicates the null hypotheses[27]):

Hypothesis 1: *H_1: Opinions differ between sectors.*
H_0: Opinions do not differ between sectors.

Hypothesis 2: *H_1: Opinions differ between UN Regions.*
H_0: Opinions do not differ between UN Regions.

The main purpose of testing these hypotheses was to explore if there were trends in end-user responses that indicated whether or how opinions differed between and within sectors or UN Regions, which is linked to whether specific sectors or UN Regions disproportionately focused on one set of needs or concerns over others. We assumed that identifying these types of trends would help us to understand end-users' needs and concerns and that this would then enable us to better address and integrate this input into the development of the KBA Standard.

7.2 Considering response trends by sector and UN region

This chapter focuses on the four topics that elicited the highest level of divergence in opinion between end-users: issue of scale (Q5, Q6), prioritisation (Q8), costs (Q9), and informing land-use decision-making (Q11). The end-user responses were categorised into five sectors (private sector, national government, intergovernmental agency, civil society, and academia) and five UN Regions (Western Europe and Others Group, Latin American and Caribbean Group, Eastern Europe Group, Asia-Pacific Group, and African Group) (**Appendix 4-C** – UN Regions).

[27] The alternative hypothesis (H_1) is our assumption and what we seek to test. The null hypothesis (H_0) is presumed to be true until the data provide sufficient evidence that it is not true.

Table 7.1 lists the descriptive statistics and **Figure 7.2** depicts the stacked bar chart for the questionnaire items that resulted in a divergence in opinion categorised by sector.

Table 7.1. Descriptive statistics for questionnaire items categorised by sector (including mode (Mo), median (Md), and inter-quartile range (IQR)). Strongly Agree = 5, Agree = 4, Neither Agree nor Disagree = 3, Disagree = 2, Strongly Disagree = 1. Higher IQR values in bold = more divergent opinions.

#	Item	Sector	Mo	Md	IQR
Q5	One global standardised approach for identifying KBAs is preferable to multiple national level approaches that identify areas of particular importance for biodiversity.	Private Sector	4	4	1
		National Government	5	4	**2**
		Intergovernmental Agency	5	4	1
		Civil Society	4	4	**2**
		Academia	4	4	1
Q8	An emphasis on KBAs could hinder conservation efforts outside of KBAs.	Private Sector	4	4	**1.5**
		National Government	4	4	**2**
		Intergovernmental Agency	5	4	1
		Civil Society	4	4	**1.5**
		Academia	4	4	1
Q9	KBA data should be freely available for commercial use.	Private Sector	5	4	**2**
		National Government	3	3	1
		Intergovernmental Agency	5	4	**1.5**
		Civil Society	2	3	**2.5**
		Academia	2	3	**2**
Q11	Development activities should not be permitted in KBAs.	Private Sector	2	2	**1.5**
		National Government	2	3	**2**
		Intergovernmental Agency	3	3	0
		Civil Society	3	3	**2**
		Academia	3	3	**2**
Q6	A focus on KBAs may undermine national processes and priorities.	Private Sector	2	3	1
		National Government	3	3	**2**
		Intergovernmental Agency	n/a*	4	**2**
		Civil Society	2	3	**2**
		Academia	2	3	**2**

* disagree and agree are equivalent.

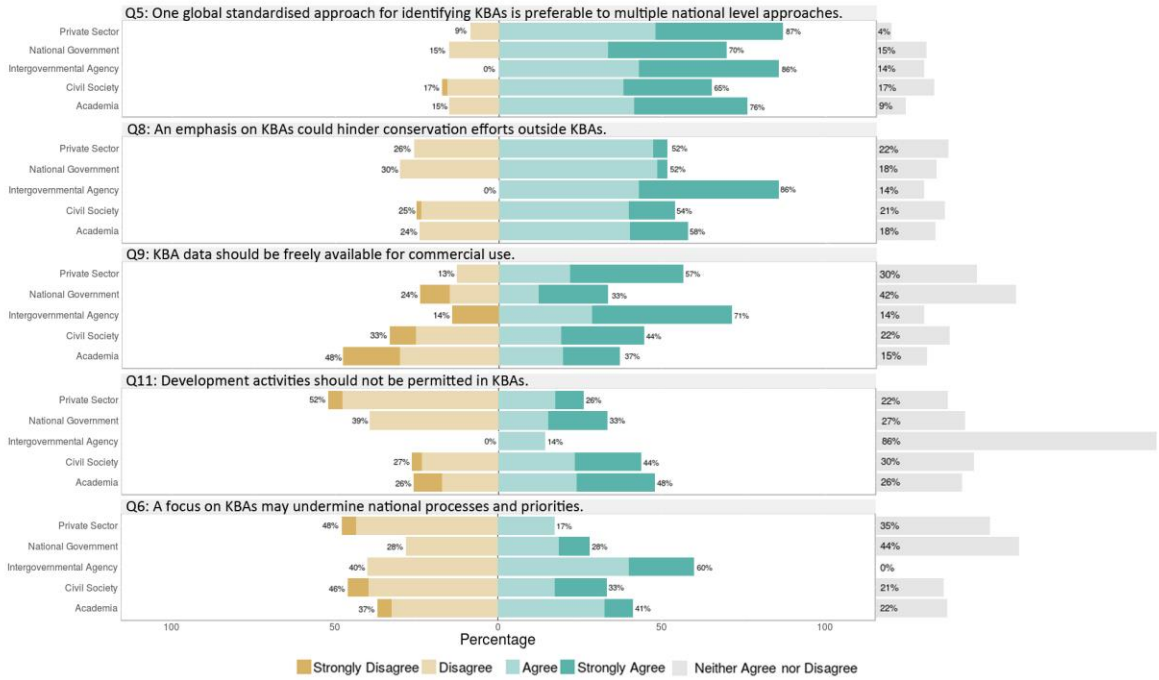


Figure 7.2. Questionnaire responses categorised by sector, ordered from higher level of convergence (top) towards increasing divergence (bottom). Private Sector n = 23, National Government n = 33, Intergovernmental Agency n = 7, Civil Society n = 64, and Academia n = 46. Percentages are for consolidated 'disagree', 'agree' and 'neither agree nor disagree', respectively from left to right.

Contrary to our hypotheses, the notable trend in the data is the relatively similar levels of divergence in opinion both between and within the sectors on these topics. For example, there are no highly polarised results where one sector agrees and another disagrees. Section 7.3 below investigates the data further using a Kruskal-Wallis one-way analysis of variance test to check for statistically significant differences between the end-user sector groups.

Table 7.2 lists the descriptive statistics and **Figure 7.3** depicts the stacked bar chart for the questionnaire items that resulted in a divergence in opinion categorised by UN Region.

Table 7.2. Descriptive statistics for questionnaire items categorised by UN region (including mode (Mo), median (Md), and inter-quartile range (IQR)). Strongly Agree = 5, Agree = 4, Neither Agree nor Disagree = 3, Disagree = 2, Strongly Disagree = 1. Higher IQR values in bold = more divergent opinions.

#	Item	Sector	Mo	Md	IQR
Q5	One global standardised approach for identifying KBAs is preferable to multiple national level approaches that identify areas of particular importance for biodiversity.	Western Europe and Others Group	4	4	1
		Latin American and Caribbean Group	4	4	**2**
		Eastern Europe Group	4	4	0.25
		Asia-Pacific Group	4	4	**1.5**
		African Group	5	4	**2**
Q8	An emphasis on KBAs could hinder conservation efforts outside of KBAs.	Western Europe and Others Group	4	4	1
		Latin American and Caribbean Group	4	4	**1.5**
		Eastern Europe Group	4	4	1
		Asia-Pacific Group	4	3	**2**
		African Group	2	3	**2**
Q9	KBA data should be freely available for commercial use.	Western Europe and Others Group	4	4	1
		Latin American and Caribbean Group	3	3	**2**
		Eastern Europe Group	2	3	**2**
		Asia-Pacific Group	5	4	**2**
		African Group	2	2	**1.5**
Q11	Development activities should not be permitted in KBAs.	Western Europe and Others Group	2	3	**2**
		Latin American and Caribbean Group	3	3	**2**
		Eastern Europe Group	5	4	1
		Asia-Pacific Group	4	4	1
		African Group	2	3	**2**
Q6	A focus on KBAs may undermine national processes and priorities.	Western Europe and Others Group	2	3	**2**
		Latin American and Caribbean Group	2	3	1
		Eastern Europe Group	4	3.5	**2**
		Asia-Pacific Group	3	3	**2**
		African Group	2	2	**2**

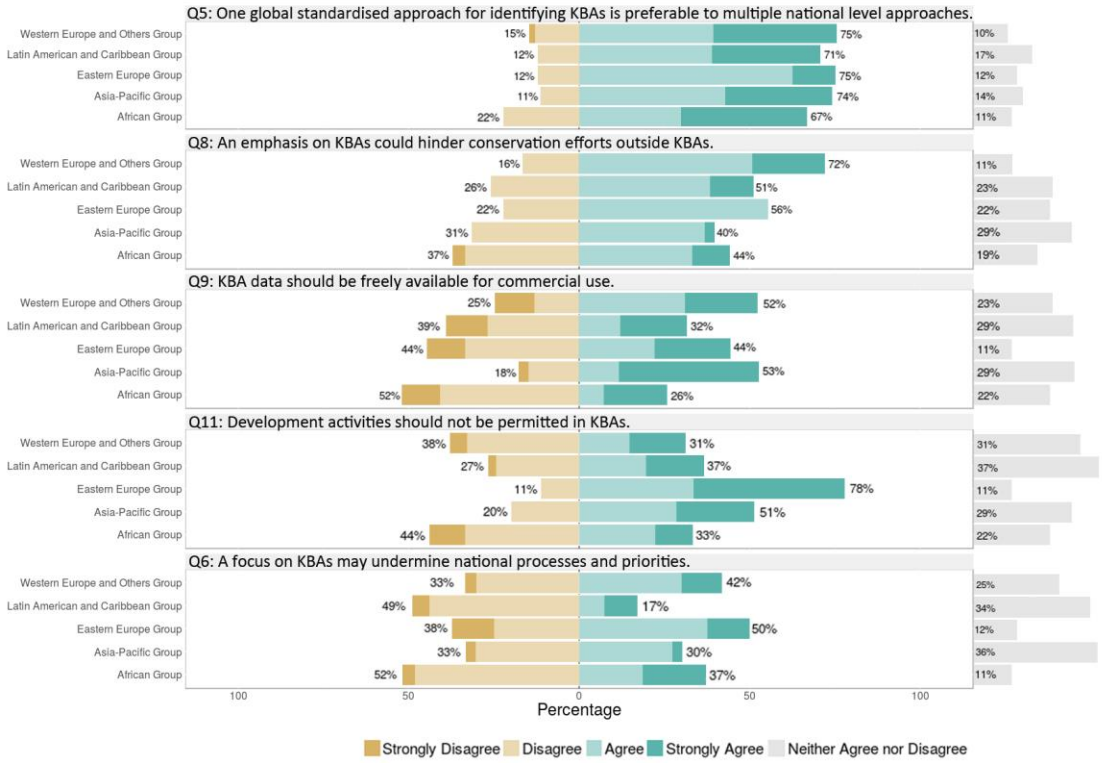


Figure 7.3. Questionnaire responses categorised by UN region ordered from higher level of convergence (top) towards increasing divergence (bottom). Western Europe and Others Group n = 61, Latin American and Caribbean Group n = 41, Eastern Europe Group n = 9, Asia-Pacific Group n = 35, and African Group n = 27. Percentages are for consolidated 'disagree', 'agree', and 'neither agree nor disagree', respectively from left to right.

Contrary to our hypotheses again, there are relatively similar levels of divergence in opinion both between and within UN Regions on these topics. For example, there are very few instances where opinion is highly polarised. The next section investigates the data further by testing for statistically significant differences between the sector and UN Region groups.

7.3 Statistical tests and analyses

As described in **Chapter 4**, I chose to use the Kruskal-Wallis one-way analysis of variance for non-parametric data to test for significant differences between end-user groups. For this test, the response categories 'strongly agree' and 'agree' were

consolidated into 'agree' and the same was done with 'strongly disagree' and 'disagree', which were consolidated into 'disagree'. The results of the Kruskal-Wallis test can be found in **Table 7.3**.

Table 7.3. Kruskal-Wallis test results. Chi-squared = X^2. **Bold** p-value ≤ 0.05 = statistically significant.

#	Item	Sector		UN region	
		X^2	*p-value*	X^2	*p- value*
Q5	One global standardised approach for identifying KBAs is preferable to multiple national level approaches that identify areas of particular importance for biodiversity.	3.4882	0.3223	0.98676	0.8045
Q8	An emphasis on KBAs could hinder conservation efforts outside of KBAs.	0.31534	0.9571	8.6411	**0.03446**
Q9	KBA data should be freely available for commercial use.	5.7479	0.1245	12.068	**0.007155**
Q11	Development activities should not be permitted in KBAs.	6.4418	0.09199	6.2261	0.1011
Q6	A focus on KBAs may undermine national processes and priorities.	4.5256	0.21	4.6626	0.1982

The Kruskal-Wallis test resulted in no statistically significant differences between sector groups; however, there were statistically significant differences (p ≤ 0.05) between UN Regions for Q8 and Q9. One of the differences observed between UN Regions in Q8 (based upon the information in **Table 7.2** and **Figure 7.3**) is between the Western Europe and Others Group and the rest of the UN Regions. Q8 states '*an emphasis on KBAs could hinder conservation efforts outside of KBAs*' and as discussed in **Chapter 6**, a small majority of the overall questionnaire respondents (56%) agreed with this statement. When analysed further, the Western Europe and Others Group demonstrated a higher level of agreement with the statement (72%) and the rest of the UN regions combined demonstrated a lower level of agreement with the statement (46%).

This is an interesting contrast that suggests that individuals within the Western Europe and Others Group believe KBAs could hinder conservation efforts outside KBAs, whereas the rest of the UN Regions combined agree less strongly with this

statement. This divergence in opinion appears, therefore, to be based upon the respondents' regions of origin. This is important because there was a high level of engagement from the Western Europe and Others Group. In the absence of this analysis, this difference would not have been discovered. This has implications for future research on end-users' needs and concerns and for how the input was used to inform the development of the KBA Standard. It is also helpful for addressing end-user input in a targeted way for different groups.

I was unable to determine specific response trends related to the differences between UN Regions for Q9, apart from what is displayed in **Table 7.2** and **Figure 7.3**. The African Group disagrees the most with the statement that '*KBA data should be freely available for commercial use*' and the Western Europe and Others Group and the Asia-Pacific Group agree the most. The other two UN Regions are quite evenly split on this issue.

7.4 Summary

This chapter addressed the question '*how did end-users' needs and concerns differ by sector and region?'* by examining end-users' needs and concerns by sector and UN Region and by developing and testing two hypotheses:

Hypothesis 1: *H_1: Opinions differ between sectors.*
H_0: Opinions do not differ between sectors.

Hypothesis 2*:* *H_1: Opinions differ between UN Regions.*
H_0: Opinions do not differ between UN Regions.

The results above provide important insights into our assumptions about end-user categories and our hypotheses, mainly that:

- we failed to reject the null hypotheses related to Hypothesis 1 based upon a lack of statistically significant differences between sector groups; and

- we can reject the null hypothesis related to Hypothesis 2 in certain circumstances, such as for Q8 and Q9, where opinions do differ between UN Regions; however, for the other topics, we cannot reject the null hypothesis.

My practitioner partners and I reflected upon the hypotheses we made and determined that it was overly simplistic of us to assume that whole sectors and UN Regions were likely to share opinions. The assumption that we could determine response trends that would indicate broad sectoral or regional interests was misplaced. End-user groups consist of a heterogeneous mix of individuals with varying opinions, experiences, knowledge, and interests. This analysis reminds us that people are individuals and can respond, think, and act in several different contexts and capacities. The reductionist desire to simplify and categorise complex situations is often tempting but can be unsubstantiated and imprudent. This has implications on the way in which end-user groups, and broader stakeholders, are identified, categorised, and ultimately engaged because it is not uncommon to categorise stakeholders in this way or to make similar assumptions about shared sector or region based interests and/or opinion.

On the other hand, it was useful to categorise responses by sector and UN Region as it did enable us to: (i) assess our sampling strategy and direct our sampling effort; (ii) evaluate engagement patterns (i.e. who was most likely to engage/respond); and (iii) examine whether there were further trends in the responses based upon sector and UN Region groups. As mentioned above, this has implications for the ways that end-users are categorised and the associated assumptions that are made about end-user groups. Other approaches to categorisation that could have been considered and used are discussed further in **Chapter 9**.

8 Evaluating the Purpose, Process, Outputs, and Outcomes of Engaging End-users

The knowledge needed to develop solutions to complex environmental problems is produced, exchanged, and used in science, policy, and practice and in the interfaces between them. Recognising the diversity of knowledge needed to address environmental challenges is important if we are to encourage collaboration and build bridges among people operating within different disciplines, sectors, and geographies. As discussed in **Chapter 3**, there are several approaches used to integrate multiple perspectives, expertise, and knowledge to inform the development of solutions to complex environmental problems, such as the loss of biodiversity. Some believe that by integrating knowledge from diverse stakeholders, improved decisions can be made that also allow for the coexistence and commensurability of a range of knowledges and forms of expertise (Raymond *et al.* 2010; Evely *et al.*, 2011; Montana, 2017).

This chapter draws upon research related to designing, delivering, and evaluating knowledge transfer, knowledge exchange, and stakeholder engagement processes and outcomes, as reviewed in **Chapter 3**. The summative evaluation that I conducted with my practitioner partners explored why and how knowledge was elicited from end-users and how it was integrated into the development of the KBA Standard. This chapter contributes to the limited but growing number of studies investigating the effectiveness of engaging stakeholders and experts in global decision-making processes (Mitchell, 2006; Hulme and Mahony, 2010; Montana, 2017) and evaluation of the process and outcomes of engaging stakeholders (Johnson, 1998; Lavis *et al.* 2003a; Blackstock *et al.* 2007; Mitton *et al.* 2007; Contandriopoulos *et al.* 2010; Fazey *et al.* 2014). This chapter concludes with a summary of the purpose, process, outputs, and outcome recommendations that

were developed based upon the summative evaluation and the results of the analysis undertaken in this thesis. The research question that this chapter addresses is outlined in **Figure 8.1**.

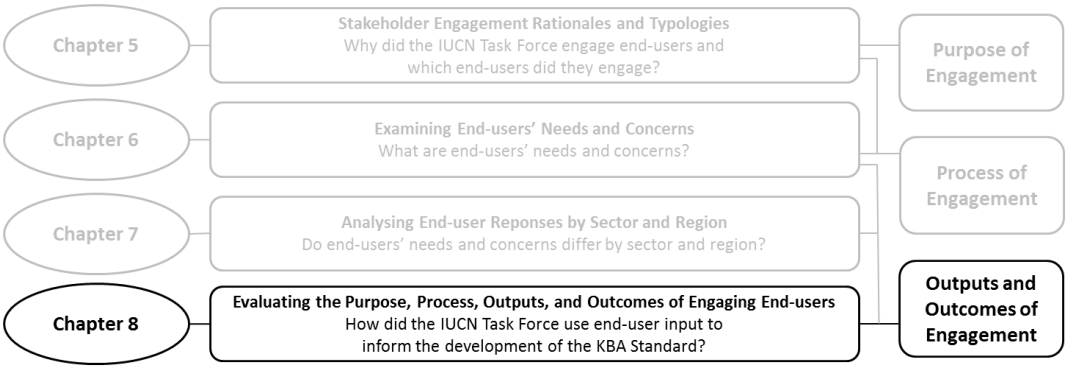


Figure 8.1. Chapter 8 research question.

The purpose of engaging end-users was to seek, report, document, and consider end-users' needs and concerns to inform the development of the KBA Standard. The rationale for doing this was a blend of: (i) substantive drivers that sought to bring together different knowledge and experiences to address end-users' needs and concerns by developing appropriate solutions and by using this input to inform decisions (Beierle, 2002; Blackstock, 2007); and (ii) instrumental drivers seeking to legitimise the process and justify these decisions (Reed *et al.* 2009). The IUCN Task Force incorporated this end-user input into the development of the KBA Standard and into decisions regarding associated KBA governance structures. This was done to ensure the usefulness and relevance of the resulting KBA Standard and associated data and demonstrates the pragmatic and applied nature of the end-user engagement process. As previously described in **Chapter 4** and **Chapter 5**, I undertook a summative evaluation with my IUCN Task Force practitioner partners in March 2016 to assess the purpose, process, outputs, and outcomes of engaging end-users. Following the summative evaluation, I disengaged from my action research participant-as-observer role to analyse the data I had collected and to write up the results. The global stakeholder engagement process continued during

that time, as did the evolution of the KBA Standard and its associated governance structures. This chapter provides a summary of the summative evaluation, the evolution of the KBA governance structure, the ways that the end-user input informed the development of the KBA Standard, and the purpose, process, output and outcome related recommendations that have resulted from this research and practice.

8.1 Process: evaluating how end-users were engaged using principles of good practice in international standard setting

As mentioned in **Chapter 2**, the global stakeholder engagement process has been referred to as the most consultative process that the IUCN has ever undertaken. The following quote from the 2015 KBA Standard Consultation Document describes the development of the KBA Standard as:

> "*…a long and intense process of consultation within, and beyond, the conservation community*."
>
> IUCN (2015: xi)

To better understand and evaluate how end-users were engaged, I asked my practitioner partners to evaluate our efforts against a set of principles of good practice in international standard setting (ISEAL, 2014). As described in **Chapter 4**, I chose the eight most relevant ISEAL principles, which can be grouped into three categories: (i) stakeholder identification (principles 1, 2, and 3); (ii) stakeholder engagement (principles 4 and 5); and (iii) process transparency (principles 6, 7, and 8). This assessment served as a tool to reflect upon the things that went well, the things that went less well, and the lessons we learned through the process. I add my own comments when my observations and experiences don't align with those of my practitioner partners. Although this evaluation is based upon perception and opinion, which risks being highly subjective, it still provides a way to reflect upon the process and is considered to be better than no form of

evaluation (Rowe and Frewer, 2004). This section provides a summary of how my five practitioner partners evaluated the end-user engagement process against these eight ISEAL principles, using a Likert-scale from poor, fair, average, good, to excellent and includes exemplifying quotes from the additional comments that they made. Throughout this section, I note where these good practice principles and the summative evaluation results relate to the development of recommendations for future practice (all of which are outlined and cross-referenced in **Table 8.1**).

8.1.1 Stakeholder identification

Principle 1. *"At the outset of a standards development or revision process, the standard-setting organisation shall develop or update lists of sectors that have an interest in the standard and key stakeholder groups within those sectors, based on the standard's scope and its social, environmental and economic outcomes [...] Scope includes the sector and geographies to which the standard applies."*

ISEAL (2014: 12 – Clause 5.2)

When asked to evaluate our efforts against this ISEAL principle, four of my practitioner partners selected 'good' and one selected 'excellent'. My practitioner partners stated that they felt that the Framing Workshop definition and typology of end-users were important for identifying a list of end-user groups potentially interested in and relevant to the KBA Standard.

> *"I think we did a pretty thorough job of identifying potential and likely end-users of KBA data but I'm sure it wasn't completely comprehensive."*
>
> P. Langhammer (summative evaluation)

This assessment and reflection acknowledges the strength of the approach used to identify end-user sectors with an interest in the KBA Standard and is a process of engagement recommendation (Recommendation 3 – Define and Identify).

Principle 2. *"The standard-setting organisation shall: a. seek to achieve representative participation in its standard-setting activities; and b. to this end, set participation goals for interest sector engagement that can be evaluated and updated over time."*

ISEAL (2014: 12 – Clause 5.2 – Aspirational Good Practice)

When asked to evaluate our efforts against this ISEAL principle, one of my practitioner partners selected 'average' and four selected 'good'. My practitioner partners mentioned that although we did well at engaging end-users, there were certain gaps in our efforts. They also acknowledged the lack of explicit goals to evaluate the engagement process.

> *"I don't think we developed explicit goals for level of participation, but we were certainly thinking of these implicitly in, e.g., the Feb 2014 meeting when we identified gaps among the end-user consultations and put in place a plan to attempt to fill these."*
>
> T. Brooks (summative evaluation)

> *"We did not set goals per se, but we did try to be representative of each of the end-user types identified."*
>
> A. Cuttelod (summative evaluation)

The lack of goal setting links quite well to the early lack of consideration of the rationales that motivated the end-user engagement process investigated in **Chapter 5** and the initial lack of plans to evaluate outcomes. As mentioned by T. Brooks above, we did identify gaps during the end-user interview process; however, despite our efforts to fill these, we were unsuccessful. Government representatives were particularly difficult to arrange interviews with and seemed the least keen to engage. This represents a mismatch between this aspirational ISEAL good practice principle and the end-user engagement process (Recommendation 2 – Objectives).

Principle 3. *"The standard-setting organisation shall: a. identify stakeholder groups that are not adequately represented; and b. proactively seek their contributions. This shall include addressing constraints faced by disadvantaged stakeholders."*

ISEAL (2014: 13 – Clause 5.4–4)

When asked to evaluate our efforts against this ISEAL principle, two of my practitioner partners selected 'average' and three selected 'good'. My practitioner partners stated that despite our best efforts, we did not get as much input from certain stakeholder groups (such as national governments, local stakeholders, indigenous groups, and local NGOs) and geographical regions (such as Eastern Europe) as we would have liked.

> *"Despite good efforts I'm not sure how much input we got from e.g. indigenous peoples, local communities etc."*
>
> N. Dudley (summative evaluation)

> *"We did so for taxonomic [experts], but were less successful in terms of geography (engaging with developing countries in particular)."*
>
> A. Cuttelod (summative evaluation)

> *"…we identified governments as a gap, and we reached out to the CBD Secretariat to solicit help in getting the word out about the consultation process. We held a 2-hour session on the KBA Standard at the 2014 World Parks Congress in Sydney in attempt to solicit feedback from representatives of local NGOs, communities and indigenous groups. I am sure we could have done better in specifically targeting those groups in other fora."*
>
> P. Langhammer (summative evaluation)

This links to ISEAL Principle 2, which is related to representativeness, goal setting, and identifying and correcting gaps bias (Recommendation 2 – Objectives, Recommendation 3 – Define and Identify, and Recommendation 6 – Biases and Gaps).

8.1.2 Stakeholder engagement

Principle 4. *"The standard-setter proactively engages with stakeholder groups that are likely to have an interest in the standard or that are likely to be affected by its implementation, and provides them with mechanisms for participation that are appropriate and accessible. Stakeholders feel that their views are represented in the consultation process and in decision-making."*

ISEAL (2014: 9 – Credibility Principle 5)

When asked to evaluate our efforts against this ISEAL principle, four of my practitioner partners selected 'good' and one selected 'excellent'. One of the main gaps mentioned by my practitioner partners was engagement with national government representatives.

> *"It would have been good to engage more governments/government agencies and local NGOs. This was a resource limited exercise and many government people were not willing to speak on the record."*
>
> P. Langhammer (summative evaluation)

Another gap in our engagement of end-user groups that was not highlighted in relation to this principle but that is important as the KBA Standard process transitions towards the implementation phase is to engage end-user groups and stakeholders that are likely to be affected by its implementation. The ISEAL guidance (2014) further states that:

> *"Key stakeholder groups include directly affected stakeholders (those who will be impacted by implementation of the standard) and may include indirectly affected stakeholders who have an interest in the application of the standard."*
>
> p. 12

For example, as identified above, we had a gap in our engagement with local stakeholders who will be important end-users in the identification and nomination of KBAs. Out with the end-user context, it will also be important to engage local

stakeholders who may be affected by the identification of a KBA (as highlighted by both the qualitative and quantitative end-user input received through the interviews and questionnaire and discussed in **Chapter 6**; and highlighted in the early criticisms of the KBA approach in Knight *et al.* (2007)) (Recommendation 6 – Biases and Gaps). The section of this principle that relates to stakeholders feeling as though their views were represented in the process and decision-making relates to Recommendation 7 – Process Transparency.

Principle 5. *"The standard-setting organisation shall ensure that participation in the consultation process: a. is open to all stakeholders; and b. aims to achieve a balance of interests[28] in the subject matter and in the geographic scope to which the standard applies."*

ISEAL (2014: 13 – Clause 5.4)

When asked to evaluate our efforts against this ISEAL principle, three of my practitioner partners selected 'good' and two selected 'excellent'. My practitioner partners stated that we did well to reach out through IUCN networks and through a public website. They also noted that the end-user questionnaire was made available in the three official IUCN languages (English, French, and Spanish). However, they admit that it was difficult to reach all relevant sectors and regions.

> *"As usual, input was skewed to certain parts of the world but an honest effort was made to get good geographical and sector coverage."*
>
> N. Dudley (summative evaluation)

> *"…Doubtless there were still some hard-to-reach but relevant sectors who were not made widely aware of the consultation (hence I'm ranking this as "Good" rather than "Excellent")."*
>
> T. Brooks (summative evaluation)

[28] A balance of interests in stakeholder participation cannot be ensured but the standard-setting organisation should make efforts to engage all those stakeholder groups identified in the stakeholder identification process.

> *"The consultation was open to all stakeholders, but the limiting factor was getting the word out to all possible interested stakeholders. During the second round of consultation, the CBD Secretariat made an announcement to Parties, which significantly helped in getting the word out to governments."*
>
> P. Langhammer (summative evaluation)

The ISEAL guidance further states that:

> *"A balance of interests in stakeholder participation cannot be ensured but the standard setting organisation should make efforts to engage all those stakeholder groups identified in the stakeholder identification process."*
>
> p. 13

We attempted to speak to at least one representative from each of the sectors identified; however, it was not possible to speak to everyone we would have liked to. As outlined in **Chapter 5**, Dudley *et al.* (2014) discuss this challenge:

> *"While it has certainly not been possible to speak with everyone we would have wished to, the exercise represents an effort to* ***gain an improved understanding*** *of how different end-users view KBAs, what their hopes and concerns are, and their opinions about the methodology. These opinions have been enormously helpful in framing the KBA standard."*
>
> p. 2 – emphasis added

Also, as previously outlined above and in **Chapter 5**, the interviewees and questionnaire respondents were biased towards certain sectors and regions. It would have been good to better understand and correct for this but this would have required additional time and resources (Recommendation 3 – Define and Identify and Recommendation 4 – Categorise).

8.1.3 Process transparency

Principle 6. *"The standard and information about its development are made freely and publicly available at a minimum via an organisation's website. This includes, at least, draft and final versions of the standard, information on governance (how decisions are made and by whom, and how to participate in decision-making and standards development), and information on consultation (stakeholder input and how it was addressed in standards development)."*

ISEAL (2014: 9 – Credibility Principle 7)

When asked to evaluate our efforts against this ISEAL principle, one of my practitioner partners selected 'average', three selected 'good', and one selected 'excellent'. My practitioner partners stated that they felt that the transparency related to the review of the comments received and the publication of the responses set a new bar for transparency of IUCN process; however, they felt as though we could have done better at communicating how particular decisions were made.

> *"Not sure how much we told people about why particular decisions were made. I might be wrong about this though."*
>
> N. Dudley (summative evaluation)

> *"…set a new bar for transparency of IUCN process, and compares favourably to other similar processes (e.g., IPCC and IPBES only publish responses to comments after their reports are published)."*
>
> T. Brooks (summative evaluation)

> *"The standard and information about its development was made freely and publicly available on two different websites. We could have provided more information about how decisions are made in making changes to the Standard, i.e. the KBA editorial team."*
>
> P. Langhammer (summative evaluation)

Something that did not emerge from my practitioner partners' evaluation of the final part of this principle, concerning information on consultation, was our lack of

transparency on the end-user input received through the quantitative questionnaire. Apart from the analysis provided here in this thesis (**Chapter 6** and **Chapter 7**) the quantitative results have not yet been shared with the end-users who responded (beyond my presentation at the WCC), nor made publicly available. In contrast, qualitative comments or questions from the questionnaire that required responses were incorporated into the list of over 1742 comments with individual responses from the IUCN Task Force, which are publicly available[29]. The interviews were published in Dudley *et al.* (2014) including IUCN Task Force responses to certain end-user needs and concerns and the description of how end-user input informed the development of the KBA Standard is provided below in Section 8.2.2 (Recommendation 7 – Process Transparency).

Principle 7. *"The standard-setting organisation shall: a. compile all comments received during a consultation period; b. prepare a written synopsis of how each material issue has been addressed in the standard revision; c. make the synopsis publicly available; and d. send it to all parties that submitted comments."*

ISEAL (2014: 13 – Clause 5.4–5)

When asked to evaluate our efforts against this ISEAL principle, one of my practitioner partners stated that they didn't know, one selected 'good', and three selected 'excellent'. My practitioner partners broadly felt as though this part of the consultation process was done well, comments were compiled, responded to, and made publicly available.

> *"I believe a subset of the comments received from end users were incorporated into the full set of comments on the Standard. These were answered and the comments and responses posted online."*
>
> P. Langhammer (summative evaluation)

[29] The KBA website is being updated and these are not available; however, I have been assured that the consultation documents and comments and responses will be publicly available following this update.

This links to ensuring that the input elicited is both considered and acknowledged through integration processes (this relates to the need for decision-making transparency outlined in ISEAL Principle 6 and Recommendation 7 – Process Transparency).

Principle 8. *"The standard-setting organisation shall make original comments received during a consultation period publicly available[30]."*

ISEAL (2014: 14 – Clause 5.4–6 – Aspirational Good Practice)

When asked to evaluate our efforts against this ISEAL principle, one of my practitioner partners stated that they didn't know, one selected 'good', and three selected 'excellent'. All comments received during the online consultation on the KBA Standard were made publicly available. Only certain end-user comments (those that were relevant to the development of the KBA Standard methodology and those that required a response) were included in this process.

> *"The comments on the end user survey which were incorporated into the full set of comments on the Standard (I am not sure if this was all of them) have been made publicly available. A synthesized version of the comments from end-user interviews was made available through publication of the End-User report (Dudley et al.2014)."*
>
> P. Langhammer (summative evaluation)

This relates to the importance of including explicit plans for how comments will be addressed and/or integrated in the design and communication of the end-user engagement component of the wider stakeholder engagement process (Recommendation 7 – Process Transparency).

This component of the summative evaluation allowed us to consider the end-user engagement process alongside eight of the most relevant ISEAL good practice

[30] Original comments that are made publicly available can be attributed to the stakeholder group but should not be attributed to individual stakeholders unless those stakeholders have consented to be identified.

principles, which allowed us to reflect upon the strengths and weaknesses of our mixed methods end-user engagement approach. These ISEAL principles relate to five of the 11 recommendations (as outlined above and summarised in **Table 8.1**).

8.2 Exploring how the end-user engagement process outcomes were used to inform the development of the KBA Standard

This section examines the evolution of the KBA approach and how the end-user input has influenced the development of the KBA Standard and the resulting KBA governance structure. Understanding the KBA governance structure provides important context for the implementation phase of the KBA Standard and provides evidence of how some of the end-user input has been addressed and incorporated into the on-going KBA process and the recently established KBA governance mechanisms.

8.2.1 The development of the KBA governance structure and the establishment of the KBA Consultative Forum

During the final phase of the global stakeholder engagement process, a KBA Partnership was developed to support the implementation of the KBA Standard. This partnership currently consists of a group of eleven[31] conservation organisations, tasked with supporting the identification, delineation, monitoring, and safeguarding of KBAs. The concept of a KBA Partnership emerged from the Governance Workshop (Technical Workshop, IUCN (2014c)), which led to a KBA Partnership Scoping Meeting (April, 2015) and a KBA Partnership Agreement Negotiating Meeting (February, 2016). This has resulted in the establishment of a number of governance bodies that supersede the IUCN Task Force, including: a KBA

[31] The eleven KBA Partners: BirdLife International, IUCN, Amphibian Survival Alliance, Conservation International, Critical Ecosystem Partnership Fund, Global Environment Facility, Global Wildlife Conservation, NatureServe, Royal Society for the Protection of Birds, World Wildlife Fund, and Wildlife Conservation Society.

Partnership (a collaboration of organisations that coordinate the KBA Programme), a KBA Committee (to govern the implementation of the KBA Standard), a KBA Secretariat (to coordinate KBA activities and manage KBA data), a KBA Community (to support and connect institutions identifying KBAs on the ground and in the water), a KBA Standards and Appeals Committee (to develop and update guidelines for the application of the KBA Standard and to adjudicate appeals), and, importantly in light of this thesis, a KBA Consultative Forum (to convene feedback from end-users). This new and evolving KBA governance structure is depicted in **Figure 8.2**.

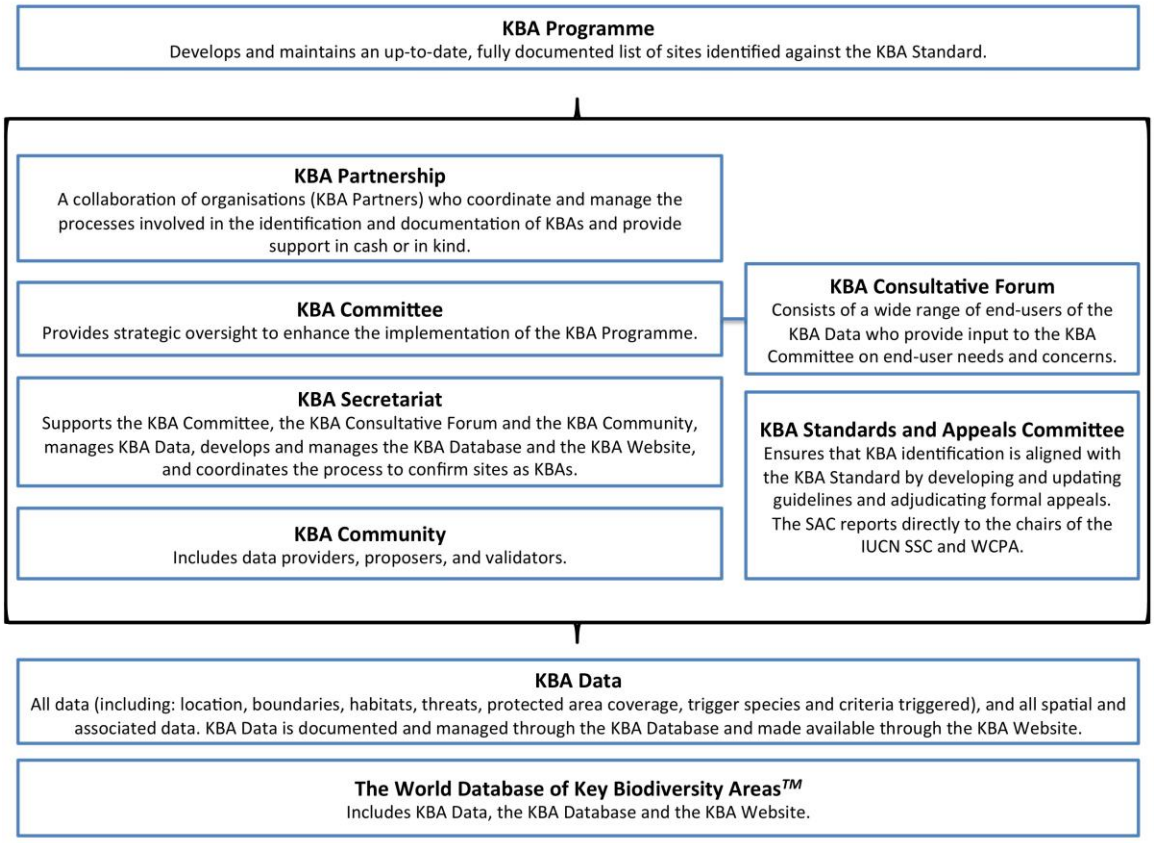


Figure 8.2. KBA Governance Structure.

The structure and governance mechanisms related to the KBA Partnership and the associated governance bodies depicted in **Figure 8.2** were too nascent to be analysed within this thesis; however, the outcomes of this thesis will continue to inform their development and future work, particularly in relation to the establishment of the KBA Consultative Forum. The purpose of the KBA Consultative Forum is to provide a mechanism to elicit on-going input and feedback from a range of end-users on the use and application of the KBA Standard and to communicate their needs and concerns to the KBA Secretariat, KBA Committee, and KBA Partnership. The KBA Consultative Forum represents a continuation of the end-user engagement process and although it is still in inception, it will be an important component of maintaining and supporting knowledge transfer and exchange with end-users.

8.2.2 Integrating end-user needs and concerns

In **Chapters 5**, **6,** and **7**, and through the summative evaluation results included in this chapter, I described and analysed the purpose, process, outputs, and outcomes of the end-user engagement effort. Here I explore how the outcomes have been addressed and/or integrated into the development of the KBA Standard. Similarly to the structure of **Chapter 6**, the structure of this section reflects the five main emergent interview categories: (i) stakeholder engagement; (ii) existing approaches; (iii) issue of scale; (iv) implementation of the KBA Standard; and (v) informing decision-making.

8.2.2.1 Stakeholder engagement

One of the outcomes from the analysis of the end-user input was that stakeholder engagement and communication were important topics to consider and that they would need to be key components of the on-going development and implementation of the KBA approach. The need for improved communication has

been integrated into the KBA Partnership Agreement[32] through an objective to promote and communicate the importance, utility, and value of the KBA approach as an approach to inform conservation planning, decision-making, and policy-setting. The importance of stakeholder engagement was recognised and incorporated into the KBA Partnership Agreement through an operationalisation principle that states that every effort will be made to ensure wide stakeholder engagement at all stages of the KBA identification process. The KBA Partnership Agreement also identifies and describes the main stakeholders, which includes local and national stakeholders; however, further consideration is needed regarding the influence that KBA identification may have on local stakeholders. As noted in **Chapter 6**, this will be a challenging element of the implementation of the KBA Standard due to the different ways that the KBA approach can be perceived and interpreted and the diverse array of stakeholders that the KBA approach potentially involves and affects.

8.2.2.2 Existing approaches

The analysis of the qualitative data related to the relationship between KBAs and existing approaches indicated that there was a need for collaboration as well as concerns regarding the potential for conflict between approaches. In many ways, the KBA Partnership reflects how these needs and concerns were integrated into the development of the KBA Standard governance structure to harmonise and coordinate efforts across diverse approaches for different taxonomic groups and regions. Many of the existing approaches listed in **Chapter 2** (Table 2.1) are now KBA Partners, which helps to address some of the concerns about the proliferation of approaches as well as ensuring that the concerns of existing approaches are understood and addressed. The initial concept of a KBA Partnership originated from the offers of collaboration and partnership received during the end-user

[32] The KBA Partnership Agreement is currently not publicly available; however, it was shared with me by my practitioner partners and permission was obtained to paraphrase it here in this thesis.

interviews and through the knowledge transferred and exchanged during the KBA Technical Workshops.

8.2.2.3 Issue of scale

End-users had diverse opinions on the topic of global vs. regional/national scale KBAs. This topic was also the subject of many exchanges that occurred during the wider global stakeholder engagement process and has been integrated into the KBA Standard and clarified in the KBA Partnership Agreement. The KBA Standard (IUCN, 2016a) states that although the KBA criteria are intended for the identification of KBAs meeting thresholds of global significance, the criteria can also be applied with less stringent thresholds to identify sites of national/regional significance. The KBA Partnership Agreement also includes guidelines for applying the KBA Standard at regional and national levels and guidance regarding which sites are eligible to be labelled as KBAs.

8.2.2.4 Implementation of the KBA Standard

End-users expressed needs and concerns related to data and additional information, timeliness of the KBA Standard, and the cost of identification and management of KBAs. Concerns about a lack of data are acknowledged in the KBA Standard, which states that since:

> "*…the availability of high quality data differs significantly between different taxonomic groups…there are a range of metrics that can be used…including: number of mature individuals, area of occupancy, extent of suitable habitat, range, number of localities, and distinct genetic diversity…accepting that data will often be insufficient to allow this.*"
>
> IUCN (2016: 5-6)

There was also extensive testing of the proposed criteria and thresholds using datasets covering diverse taxonomic groups, regions, and environments (IUCN,

2016a). End-users also expressed a need for additional information (for example: related to climate change impacts, ecosystem services, traditional ecological knowledge, and socio-economic data). The KBA Standard states that:

> *"A minimum set of information is required for each KBA to support and justify the recognition of a site as a KBA, and an additional set of recommended information should ideally be compiled for each site."*
>
> IUCN (2016: 7)

The KBA Standard also states that:

> *"KBA delineation is an iterative process that makes use of better and more recent data as they become available. Stable boundaries are desirable but the delineation process must be able to accommodate changes in knowledge (including local and indigenous knowledge) and the reality on the ground."*
>
> IUCN (2016: 29-30)

The guidance on the information needed for KBA documentation distinguishes between: (i) required supporting information for all KBAs; (ii) required supporting information under specific conditions; and (iii) recommended supporting information (IUCN, 2016a: 35). This relates to the fact that a compromise was needed between making the documentation comprehensive and useful and ensuring that the documentation process also remained straightforward and not overly arduous.

End-users also shared concerns about the timeliness of the development and implementation of the KBA Standard. This is another area of compromise as a thorough global stakeholder engagement process that builds upon a foundation of robust scientific evidence can take a considerable (and often underestimated) amount of time. There is a trade-off between developing a quick way to inform decision-making and ensuring that the approach is valid, well supported, and

accepted in a variety of contexts; however, most end-users stated that they needed the KBA approach to be developed and implemented as quickly as possible. This relates to the pragmatic and applied nature of the approach but also highlights a disconnect between end-users' needs and the reality of how long engagement processes, evidence-based science, and KBA identification can take.

End-users also mentioned concerns about the resources needed to identify and manage KBAs and one end-user indicated that KBA data should be made freely available to all institutions and sectors. The quantitative data indicated that end-users were quite evenly split on the issue of 'who pays' (**Chapter 6**, Figure 6.1). This further complicates the timing dilemma as end-users expressed a need for KBA data to be available quickly alongside an unwillingness to pay to support KBA identification processes. One way in which this has been addressed is through the establishment of the KBA Partnership. KBA Partners provide support in cash and/or in kind and have broadened the number of institutions and people involved in KBA implementation, which helps to address some of the resource challenges and also addresses one end-user's concerns about IUCN's capacity and resources to coordinate the implementation and management of KBAs as this responsibility is now shared through the KBA Partnership. The KBA Partnership Agreement also includes details on the terms and conditions of use (including copyright and ownership of the data) and a fundraising protocol. IUCN has a Policy for Commercial Use of IUCN Biodiversity Data, which informs how KBA data can be used.

8.2.2.5 Informing decision-making

End-users commented on the various ways that KBAs could and/or should inform decision-making, which related mainly to: (i) management options; (ii) sustainable use; and (iii) prioritisation. The comments related to management options for KBAs

were integrated into the development of the KBA Standard, which clarifies that the identification of a site as a KBA is unrelated to any specific management option or legal status. Although many KBAs overlap wholly or partly with existing areas of importance for biodiversity (such as protected areas or sites designated by international conventions), other management approaches may also be appropriate.

> "…the identification of a site as a KBA simply implies that the site should be managed in ways that ensure persistence of the biodiversity elements for which it is important."
>
> IUCN (2016: 8)

End-users' needs for management options also resulted in a parallel project referred to as 'Guiding Responsible Business Operations in Key Biodiversity Areas' led by IUCN's Global Business and Biodiversity Programme. Early in 2016, the project initiated a process to develop a set of 'Principles and Recommendations for Responsible Business Operations in and around Key Biodiversity Areas' and 'Technical Guidance' outlining how businesses should operate in and around KBAs. They have defined the main users of these documents as businesses operating in or sourcing materials from or near KBAs. In addition, they state voluntary sustainability standards, financial institutions, and regulators as potential users of this guidance. The development of this guidance is on-going and has thus far involved three meetings and targeted consultations on a first draft of the 'Principles and Recommendations'. The second draft is open for public consultation from December 2016 to March 2017.

The structure and mechanisms related to the KBA Consultative Forum are still in development and I have recommended that the end-users that have been engaged in the 'Guiding Responsible Business Operations in Key Biodiversity Areas' project

should be considered as initial candidates for involvement in the KBA Consultative Forum.

Debates about sustainable use have been prominent in conservation and development discourse for decades (IUCN, 1980; Adams, 2004). It is not surprising, therefore, that this emerged as an important issue in the context of KBAs. Both the qualitative and quantitative data explored in this thesis indicated that end-users have diverse needs and concerns in relation to whether sustainable use should be permitted in KBAs. The way this has been addressed in the KBA Standard (as indicated above for the topic of management options and as will be discussed below in relation to prioritisation) was to state that the although the identification of a KBA implies that the site should be managed to ensure the persistence of biodiversity, this does not imply any specific type of conservation action or management type. This does leave the decision open to interpretation and this is an area that the 'Guiding Responsible Business Operations in Key Biodiversity Areas' project described above attempts to provide further guidance on.

This is an on-going and challenging topic being debated with end-users, stakeholders, and throughout the wider conservation community. It is also closely linked to the concept of biodiversity offsetting, which is also being considered through the 'Guiding Responsible Business Operations in Key Biodiversity Areas' project. The topic of 'no go' in protected areas and other important sites for biodiversity and IUCN's policy on biodiversity offsetting were both motions/decisions negotiated during the 2016 WCC. The Biodiversity Consultancy (TBC) (2016a,b) provide good summaries of the discussions and outcomes and how they relate to business. Decision 26 calls for strict 'no go' in all categories of protected areas and industry is asked to withdraw from activities in protected areas and not to operate in protected areas in the future (TBC 2016b). Decision 64 adopted a Biodiversity Offset Policy for IUCN that relates to accepted good practice

principles; however, it indicates that impacts in protected areas cannot be offset, which supports Decision 26 (TBC, 2016b). The intricacies and complexities of these issues are out with the scope of this thesis; however, they relate closely to the concept of the neoliberalisation of biodiversity conservation (Igoe and Brockington, 2007; Büscher *et al.* 2012) and the desire of IUCN to strike a balance between developing a pragmatic yet scientifically robust approach to identifying areas of importance for biodiversity.

The analysis of the qualitative and quantitative data demonstrated a diversity of opinions on the topic of prioritisation. Some end-users explicitly stated that KBAs should not be used to prioritise conservation action and others expressed that this was an important tool towards priority-setting. The language related to priorities and prioritisation has evolved considerably throughout the development of the KBA Standard. Initially, KBAs were directly referred to as priorities for conservation:

> *"The development of a global umbrella for KBAs could help ensure coordination and standards in KBA identification and prioritisation as a core strategy to guide conservation action at the site scale."*
>
> Langhammer *et al.* (2007: xiv)

This changed over time based upon feedback from end-users and other stakeholders. The Framing Workshop (IUCN, 2012b) focused upon the topic of priority-setting:

> *"Areas of biodiversity significance should serve as a data layer to inform subsequent stages of planning. Hence, these areas are not a result of a prioritisation exercise but a spatial input layer to be used by stakeholders involved in conservation planning to move onto the next stages of the planning process which may include prioritisation…Such prioritisation will necessitate integrating the biodiversity-significance layer with other vital layers of information relating to site vulnerability, costs associated with candidate management actions, feasibility of implementing these actions, etc."*
>
> IUCN (2012: 29)

Since that time, language that describes KBAs as priorities has been avoided. The KBA Standard (IUCN, 2016a) states that:

> *"KBAs are sites of importance for the global persistence of biodiversity. However, this does not imply that a specific conservation action, such as protected area designation, is required. Such management decisions should be based on conservation priority-setting exercises, which combine data on biodiversity importance with the available information on site vulnerability and the management actions needed to safeguard the biodiversity for which the site is important. It is often desirable to incorporate other data into priority-setting, such as conservation cost, opportunity for action, importance for conserving evolutionary history and connectivity. KBAs thus do not necessarily equate to conservation priorities but are invaluable for informing systematic conservation planning and priority setting, recognising that conservation priority actions may also be outside of KBAs."*
>
> p. 8

The official IUCN response to end-users' comments on prioritisation was (Dudley *et al.* 2014):

> *"Many end-users regarded KBAs – in fact stated that they intended to use KBAs – as tools for prioritization of land and water for conservation. This is not the intention of IUCN: KBAs are an important tool to inform conservation priorities but will not be the only form of information that needs to be taken into account when deciding where best to invest conservation funds and effort. However, the history of other IUCN standards, such as the IUCN protected area categories, suggests that end-users do not always apply tools in the ways originally envisaged by their developers and IUCN should continue to monitor how KBAs are applied in practice and make modifications as necessary."*
>
> *p. 102*

This change in the use of language related to prioritisation is interesting and has resulted in less focus on considering KBAs as direct priorities for conservation. The majority of end-users who responded to the online questionnaire agreed that KBA data should inform prioritisation and a smaller majority also agreed that KBAs should themselves be priorities for conservation action (**Chapter 6**). Despite this outcome, input from certain stakeholder groups (primarily the systematic conservation planning community around the time of the Framing Workshop (IUCN, 2012b)) had a profound influence on this topic and the language that is now used in relation to conservation priority-setting and KBAs.

End-users also expressed concerns about what the identification of KBAs means for areas outside KBAs, which is a topic that is closely related to prioritisation. Many end-users agreed that an emphasis on KBAs could hinder conservation efforts outside KBAs. This resulted in an interesting discussion about how this can be interpreted with one of my practitioner partners. One interpretation is that this would be a negative outcome for conservation, by limiting the diversity of conservation efforts and creating opportunities to perceive anything outside KBAs as open for development and/or as not important for biodiversity. Conversely, the other way this could be viewed is that it would result in positive outcomes for conservation by focusing conservation effort and scarce resources and by facilitating development in less important areas for biodiversity. Follow up questions to determine how stakeholders perceive this and the implications on how the KBA Standard is being interpreted and implemented would be useful to improve our understanding of this issue.

Another topic closely related to prioritisation that emerged from the analysis of the interviews was the concept of ranking of KBAs (i.e. prioritising between KBAs). The qualitative data implied that some end-users were strongly opposed to this idea and others very supportive. The quantitative data analysis determined that the

majority end-users that responded believed that KBAs should be ranked. There is no formal IUCN response or decision on this topic; however, this perhaps implies or suggests that developing and maintaining a ranked list of KBAs based upon other types of priorities is something that end-users can do if this is useful in their specific decision-making context. For example, one end-user highlighted that:

> *"The more information provided, the more options exist for end-users to rank and prioritise based on their own set of criteria."*
>
> Zoological Society of London EDGE Programme (interview)
> Civil Society, Western Europe and Others Group

This is an end-user need and an area of slight divergence that has not been directly addressed or integrated, therefore it is a topic that should be considered further through the KBA Consultative Forum once it has been established.

During the summative evaluation, I asked my practitioner partners '*how was the input that we elicited from end-users used and integrated into the participatory development of the KBA Standard?*' Their responses (and the description of how end-user responses were integrated into the KBA Standard detailed above) relate to five fundamental ways in which the outcomes of this research have been used:

(i) the integration of certain end-user qualitative questionnaire comments into the wider set of comments received through the online consultation on the KBA Standard (responses provided and changes made where necessary, related to the substantive rationale for engaging end-users), for example:

"We incorporated comments from the end-user surveys into the full set of comments received during the online consultation. Each of these comments received an individual response, and where clarifications were needed in the Standard, we made the edits to the document. In addition, we have had face-to-face or phone discussions with a number of the end-users, such as the International Finance Corporation, which has helped to streamline and simplify the [KBA Standard] so that it is easier to understand."

P. Langhammer (summative evaluation)

(ii) to encourage increased process transparency (related to the instrumental rationale for engaging end-users), for example:

"It forced us to be more open and transparent..."

S. Woodley (summative evaluation)

(iii) the establishment of the 'Guiding Responsible Business Operations in Key Biodiversity Areas' project and associated 'Principles and Recommendations', for example:

"…some of the main issues are probably being dealt with slightly separately; for instance the question of advice about managing KBAs, which was demanded by several users, is being addressed in a separate project."

N. Dudley (summative evaluation)

(iv) the establishment of the KBA Consultative Forum as a governance mechanism to enable on-going engagement with end-users.

"…the main track forward…is the development of a KBA Consultative Forum as a body with a right to pose requests and questions to the KBA Committee (which in turn will have a responsibility to respond). The end-user consultation benefited the KBA Standard consolidation process greatly through both substantive input and strengthening legitimacy; if the KBA Consultative Forum is able to maintain these benefits into the future, it stands to be a hugely important contribution."

T. Brooks (summative evaluation)

(v) to further integrate end-users' needs and concerns into the development of the KBA Standard, as described above and as summarised by T. Brooks:

> *"…the development of the KBA Standard was informed by the end-user consultation process but not driven by it. Some examples of points emerging as common issues from the end-user consultation process and reflected into the Standard include: a) the importance of building from existing approaches (this dates all the way back to the 2004 Resolution, of course), which informed both the establishment of criteria and thresholds, and the delineation procedures; b) clarity on the scope and scale of KBAs: the former (global significance) was built into the definition; the latter (site scale) is key to the delineation procedures; c) avoiding blanketing the world with KBAs (because if everywhere is important, nowhere is!), which became a guiding consideration in establishment of the thresholds. Many other issues emerging from the end-user consultation also became key considerations in the development of the KBA governance mechanism (e.g., regarding documentation, rules and procedures, and data access), and have culminated in the plan for development of a KBA Consultative Forum as an ongoing mechanism for input from end-users into the KBA process."*
>
> T. Brooks (summative evaluation)

These are important outcomes related to the end-user engagement process and highlight the contributions made through this thesis that may otherwise not have been considered in such detailed depth and breadth. The end-user interviews and questionnaire identified both common and conflicting needs and concerns and helped to ascertain the main areas of convergence and divergence in end-user opinion. Many of these topics were incorporated into the development and finalisation of the KBA Standard, as outlined above. The remainder have been presented to the KBA Partnership for further consideration within the KBA Consultative Forum. There are several lessons that we learned about engaging end-users. These can be categorised in to purpose, process, output and outcome recommendations, which are summarised below.

8.3 Purpose, process, output and outcome recommendations

During the summative evaluation, I asked my practitioner partners about the possibility of compiling a set of recommendations, which they all supported. I have

integrated their recommendations from the summative evaluation with those that emerged through this research into 11 purpose, process, output and outcome recommendations outlined below in **Table 8.1**.

Table 8.1. Summary of recommendations.

Recommendations	Description
Purpose of engagement	
1 – Rationale	Develop an early understanding of the rationale(s) for engaging end-users and transparently communicate these throughout the process. Consider the implications of each rationale in terms of power and democracy.
2 – Objectives	Set objectives and establish criteria to evaluate whether they have been achieved. Do not rely on measuring the quantity of engagement, but instead devise objectives and evaluation criteria related to the quality of the engagement.
Process of engagement	
3 – Define and Identify	Define and identify who end-users are. Ideally this would be done in a participatory way with end-users to clearly define the scope of the issue and identify all those with a stake or interest in it.
4 – Categorise	Categorise end-users with the objectives for the engagement process in mind. Consider the different categorisation methods that could be used and ensure they are useful and not too broad. Do not assume that groups share interests or opinions.
5 – Mixed Methods	Use a mixed methods approach to determine end-users' needs and concerns. Qualitative end-user interviews are useful for determining their main needs and concerns and for providing in depth understanding; however, these should be complemented and substantiated using additional methods, such as a questionnaire, with a larger group of end-users for an increased breadth of understanding.
6 – Biases and Gaps	Consider biases and gaps in the identification and engagement of end-user groups, including: interests, expertise, sectors, regions, and different scales (i.e. global, regional, national, local)) and take action to correct for these as early in the process as possible. Identify the strengths and weaknesses of existing networks and avoid only targeting the typical stakeholders.
7 – Process Transparency	Design, document, and communicate a clear and transparent decision-making process for how end-user input will be integrated. Ensure that this process is openly communicated to end-users and feedback mechanisms are in place to evaluate the process and outcomes. It is important to systematically and transparently consider and address the input received and follow-up with end-users with decisions/results/outcomes as early as possible.
8 – Resources	The design and implementation of a meaningful end-user engagement process is resource intensive. Consider the financial and human resources that will be needed. Plan and fundraise for these early in the process. Do not underestimate how long end-user engagement will take and be prepared to adapt based upon the available resources, context, and needs and concerns of end-users.
9 – Facilitation	It is advisable to use professional facilitators or to consult engagement experts during the design and implementation of an engagement process, particularly for difficult processes or issues with high potential for conflict. This can help to build trust in the process and outcomes.
Outputs and outcomes of engagement	
10 – Evaluate and Share	Evaluate the purpose, process, outputs, and outcomes of engaging end-users and use the results to document and share experiences and recommendations.
11 – On-going Engagement	Design and implement on-going end-user engagement processes and/or governance structures beyond the initial project where relevant and/or needed.

Each of these 11 recommendations was derived from the research undertaken in this thesis and certain recommendations coincide with guidance found in other research literature. **Table 8.2** provides a summary of these links.

Table 8.2. Relationship between recommendations, empirical work, and other good practice guidance.

Recommendation	Relationship to this research and other good practice principles, criteria, and/or recommendations
Purpose of engagement	
1 – Rationale	• Chapter 5 – Stakeholder Engagement Rationales and Typologies
2 – Objectives	• Principle 2 and Principle 3 – Stakeholder identification (ISEAL, 2014). • Principle 1 – Design (Reed *et al.* 2014).
Process of engagement	
3 – Define and Identify	• Principle 1 and Principle 3 – Stakeholder identification; and Principle 5 – Stakeholder engagement (ISEAL, 2014). • Principle 2 – Represent (Reed *et al.* 2014).
4 – Categorise	• Chapter 7 – Analysing End-user Responses by Sector and Region • Principle 5 – Stakeholder engagement (ISEAL, 2014).
5 – Mixed Methods	• Chapter 6 – Examining End-users' Needs and Concerns
6 – Biases and Gaps	• Principle 3 – Stakeholder identification and Principle 4 – Stakeholder engagement (ISEAL, 2014).
7 – Process Transparency	• Principle 4 – Stakeholder engagement and Principle 6, Principle 7 and Principle 8 – Process transparency (ISEAL, 2014). • Principle 4 – Impact (Reed *et al.* 2014).
8 – Resources	• Chapter 5 – Stakeholder Engagement Rationales and Typologies and • Chapter 9 – Discussion
9 – Facilitation	• Chapter 3 – Research Concepts.
Outputs and outcomes of engagement	
10 – Evaluate and Share	• Chapter 8 – Evaluating the Purpose, Process, Outputs, and Outcomes of Engaging End-users. • Principle 5 – Reflect and sustain (Reed *et al.* 2014).
11 – On-going Engagement	• Chapter 8 – Evaluating the Purpose, Process, Outputs, and Outcomes of Engaging End-users. • Principle 5 – Reflect and sustain (Reed *et al.* 2014).

8.4 Summary

This chapter addressed the question '*how did the IUCN Task Force use end-user input to inform the development of the KBA Standard?*' by providing an overview of the summative evaluation of the process and outcomes of engaging end-users in the development of the KBA Standard. This included: (i) the use of a selection of

ISEAL (2014) principles of good practice in international standard setting to evaluate the end-user engagement process; (ii) an examination of how the outcomes of the end-user engagement process were used to inform the development of the KBA Standard and its governance structure; and (iii) the development of a set of 11 purpose, process, output and outcome recommendations to inform future end-user engagement practice. The next and final chapter of this thesis provides: a summary and discussion of the empirical findings, reflections on the research process, an outline of the contributions this thesis has made, and a discussion of further research directions.

9 Discussion and Conclusions

9.1 Summary and discussion of empirical findings

This chapter draws together the approaches, concepts, and theories that were introduced at the beginning of this thesis with the results that emerged from the four preceding empirical chapters to synthesise what has been discovered about the role of knowledge transfer, knowledge exchange, and end-user engagement in the production and use of a global standard. This discussion of the empirical findings of this research is sub-divided into three sections that further analyse and investigate the purpose, process, output, and outcomes of the engaging end-users.

Due to the nature of the action research approach used in this thesis, this chapter occasionally includes quotes from my practitioner partners and from IUCN documents to help provide further explanatory evidence for the interpretations of, (and reflections on) the concepts, theories, and findings. This was both necessary and useful in this research context as my practitioner partners were involved in reflecting upon the purpose, process, outputs, and outcomes through the summative evaluation and through the action research elements of the development of this discussion.

9.1.1 Purpose of engagement: evolving rationales

I began in **Chapter 5** by examining the multiple and evolving rationales used to justify engaging end-users. During the summative evaluation, my practitioner partners acknowledged their use of plural rationales to describe the purpose of engaging end-users. Drawing from this, I reflect here on the implications of the use of multiple and evolving rationales and explore the distinction made between rationales more deeply. The purpose related research question that was addressed through this work was: '*why did the IUCN Task Force engage end-users?*'

9.1.1.1 The use of multiple rationales

The different rationales that were considered to describe the purpose of engaging end-users were: normative (empowerment), substantive (decision quality) and instrumental (justifying decision-making) (Stirling, 2006). The summative evaluation indicated that instrumental and substantive rationales dominated the perspectives of my practitioner partners. Here I explore the conceptual and practical implications of this.

The purpose of engaging end-users was not to promote solely normative, substantive, or instrumental rationales. When asked, my practitioner partners focused mainly on the use of both instrumental and substantive rationales. This use of plural rationales to justify engaging end-users acknowledges the multi-dimensional and complex nature of engagement and the pragmatic and applied approach taken. The different rationales for engaging end-users are not mutually exclusive; in fact, I argue here that in many ways they are complementary and necessary to avoid a one-dimensional conception of the purpose of stakeholder engagement. This is similar to arguments about the importance of avoiding a one-dimensional view of democracy, as discussed in Fiorino (1989). Despite the tension that does exist between normative, instrumental, and substantive rationales, it is possible to simultaneously adopt multiple rationales as they are "*interrelated and entwined*" (Lawrence, 2006: 294). The somewhat artificial categorical nature of distinguishing between different rationales could lead one to think that a choice needs to be made between wanting to empower stakeholders, wanting good quality decision-making, or wanting to justify decisions; when in reality all three rationales may be relevant to, and simultaneously possible within, the context of a particular process (Lawrence, 2006). These categories do, however, help to identify and encourage reflection upon the different purposes and uses of stakeholder

engagement (Hayward *et al.* 2004). Clarifying the use of certain rationales can also help to articulate the purpose, focus, and objectives of the engagement effort (Stirling, 2006) and provides additional process transparency. Despite the merits of engagement processes, it is important to consider, understand, and sometimes critically challenge the assumptions and rationales used to underpin them (Hayward *et al.* 2004).

9.1.1.2 Examining the concept of power associated with engaging end-users

Different stakeholders tend to place importance on different rationales based upon their own agendas, motivations, and roles in the engagement process (Stirling, 2008). Related to this are the general links that can be made between normative, instrumental, and substantive rationales and the different forms of power inherent to each, which are explored further in Stirling (2006). The concept of power therefore has some use for thinking about the different rationales for engagement within the context of the KBA Standard. The use of a normative rationale is often associated with the desire to address power inequalities by empowering stakeholders. The use of a substantive rationale is said to be "*blind to power*" (Stirling, 2008: 275), as the focus tends to be on the robustness or quality of decisions. The use of an instrumental rationale tends to encourage the desires and outcomes of existing power structures.

The use of an instrumental rationale, in the case of the end-user engagement process, leads to questions about who held the decision-making power related to how end-user comments were (or were not) addressed and/or integrated. This decision-making power was ultimately held by the IUCN Task Force and, although they attempted to be transparent about purpose, process, and outcomes, one of the weaknesses identified during the summative evaluation was a lack of detail and

communication regarding how input was integrated in terms of the editorial decisions that were made (**Recommendation 7 – Process Transparency**).

The use of a substantive rationale in the case of the end-user engagement process leads to questions about how to appraise decision quality and who appraises the outcomes of the decisions. In this case, the IUCN Task Force and the KBA editorial team were responsible for the final content of the KBA Standard. With no clear process or outcome goals developed at the outset, it is difficult and/or impossible to evaluate whether or how the quality of decisions and resulting outcomes were influenced by the input obtained from end-users (**Recommendation 2 – Objectives**).

The lack of a use of a normative rationale is notable in the case of this end-user engagement process as this leads to questions about democracy and power. An interesting power dynamic exists between knowledge producers and users in this context. Normative considerations are typically linked to overcoming an asymmetrical focus on the interests of existing power structures; however, in the context of the end-user engagement process, the end-users operate within their own decision-making contexts and power structures. In many ways, the end-users hold power in terms of whether or not they decide to use the KBA Standard; simply producing knowledge does not ensure that it will be used. Whether or not end-users apply the KBA Standard will likely be influenced by a number of complex factors, including whether or not they perceive that the KBA Standard is relevant, legitimate, and accessible (Contandriopoulos *et al.* 2010). The success of the implementation phase of the KBA Standard will depend upon whether or not end-users actually apply the KBA Standard in their decision-making contexts. The power that the end-users hold, therefore, does not directly link to typical normative rationales related to the need for equality and empowerment. The user oriented nature of the development of the KBA Standard is stated in IUCN (2016):

> "*IUCN is further indebted to the hundreds of scientists and stakeholders who participated in regional workshops and end-users meetings, provided data for testing the criteria and thresholds, and submitted comments and suggestions during the consultation process. Their input has resulted in a far more robust,* ***user oriented*** *and widely applicable system.*"
>
> vi – emphasis added

In the context of this thesis, therefore, it is the end-users that are in a certain position of power as they can decide whether or not to use the KBA Standard and associated data to inform their decision-making in policy and practice. This, I argue, is why their needs and concerns were deemed important to elicit and incorporate into the development of the KBA Standard, which is also linked to the use of both substantive and instrumental rationales (**Recommendation 1 – Rationale**). By considering end-user needs and concerns, the KBA Standard is better equipped to accommodate and serve existing and potential users and uses.

Another way to consider the role and power that the end-users had/have/will have in the context of the KBA Standard is to return to the distinction between producer-push and user-pull that was introduced in **Chapter 3**, which relates to the way that knowledge is produced (Lavis *et al.* 2003a). The combination of producer-push and user-pull in an active effort to ask and answer decision-relevant questions (such as those related to land-use change and identifying areas of importance for biodiversity) relates well to the KBA context. This type of knowledge exchange approach addresses power asymmetries by establishing a two-way iterative exchange of knowledge between producers and users that values diverse sources and forms of knowledge and expertise (Phillipson and Liddon, 2007; Reed *et al.* 2013). Although much of the end-user engagement process relates more closely to definitions of knowledge transfer and consultation, a transition towards increased levels of participation and knowledge exchange should be encouraged through the KBA Consultative Forum (**Recommendation 11 – On-going Engagement**).

9.1.2 Process of engagement: stakeholder analysis

In **Chapter 5** I outlined the typology of stakeholder engagement I used to categorise the different elements of the broader stakeholder engagement process and the end-user engagement process in particular. I also explored the step-by-step process of identifying, categorising, and understanding stakeholders based upon a tailored conceptualisation of the stakeholder analysis process proposed by Reed *et al.* (2009). Although each stakeholder engagement process is unique, the basic stakeholder analysis structure outlined in **Chapter 3** provides general guidance on the key components to consider during the development and implementation of engagement processes. By evaluating how we defined, identified, and categorised end-users, we were able to use this framework to reflect upon what worked well and what requires improvement. This led to a process of learning and reflection with my practitioner partners and to the development of a set of engagement process recommendations to inform future engagement efforts. The process related research question that was addressed through this work was: '*which end-users did the IUCN Task Force engage?*'

9.1.2.1 Defining and identifying end-users

In this section, I reflect upon and discuss the implications of the way that end-users were defined (as either primary or secondary), and identified (through the development and use of the typology of end-users). The definition and typology of end-users that was developed by the end-user breakout group during the Framing Workshop (IUCN, 2012b) coincides well with the guidance given by Reed *et al.* (2009) and Durham *et al.* (2014) to define and identify stakeholders using an iterative participatory process in order to refine the scope of the issue and those who may have a stake or interest in it. The IUCN Task Force considers the process

involved in the definition and identification of end-users as a strength of the engagement process (**Recommendation 3 – Define and Identify**).

The definition and typology of end-users developed during the Framing Workshop has links and implications to the purpose, process, outputs, and outcomes of engaging end-users by directly influencing who was engaged and why. The focus within the definition of primary end-users on those who influence decision-making processes linked to mechanisms to secure biodiversity or that avoid biodiversity loss is both strategic and notable (IUCN, 2012b). Defining and typifying end-users in this way informed who we targeted during the engagement process and is directly linked to the way we designed the engagement process to elicit and understand the plurality of end-user needs and concerns (this is similar to the concept of adjusting research to the plurality of knowledge needs in society discussed in Lovbrand (2011)).

This brings up considerations about whether or not the needs and concerns of end-users should have a say in the governance of science (Sarewitz and Pielke, 2007; Barry *et al.* 2008) and, in this case, in the scientific and technical elements involved in the development and implementation of the KBA Standard. This user-oriented approach aligns closely to a trend towards increasingly transdisciplinary and accountable research observed in a number of contexts around the world (Shove and Rip, 2000; Jolibert and Wesselink, 2012; Phillipson *et al.* 2012). This also closely resembles a 'Mode 2' form of knowledge production that is said to take place in the context of application (Gibbons *et al.* 1994). The way in which the end-user engagement process does (or does not) coincide with a 'Mode 2' form of knowledge production is explored further below in Section 9.2.1.

The meaning of another term that has been employed throughout the KBA engagement process and in this thesis is the term 'end-user' itself. Phillipson *et al.*

(2012) state that the term end-user implies no involvement or engagement in the knowledge production process, which exemplifies the 'two-communities theory' (**Chapter 3**, Section 3.1.2.2) and the separation between the scientific knowledge production process and the communication and application of the results (Shove and Rip, 2000). This also relates to the distinctions between knowledge transfer (one-way) and knowledge exchange (two-way) and the distinctions between communication (one-way), consultation (one-way), and participation (two-way) reviewed in **Chapter 3**. In the context of the end-user engagement process, we used a blend of knowledge transfer (communication and consultation) processes and knowledge exchange (participation) processes; however, as end-users were engaged throughout the development of the KBA Standard and their needs and concerns were both documented and used to inform decisions regarding the content and governance of the KBA approach (as detailed in **Chapter 8**, Section 8.2.1), I would argue that they have been involved in the process in a more consequential way than the term 'end-user' suggests. I suggest that the more general term 'users' would be more appropriate to this form of engagement process in the future.

The reciprocal effects that occur as a result of the engagement and involvement of end-users during knowledge production processes are discussed in Huberman (1994). He argues that the key to knowledge use is the sustained interactivity that occurs as a result of the interpersonal two-way links that are developed and maintained through and beyond the life of a particular knowledge production process. He states that:

> *"…there are reciprocal effects, such that we are no longer in a conventional research-to-practice paradigm, but in more of a conversation among professionals bringing different expertise to bear on the same topic."*
>
> Huberman (1994: 22)

Huberman's perspective on the reciprocal nature of involving end-users in knowledge production processes relates well to the KBA context and to the establishment of the KBA Consultative Forum (**Recommendation 11 – On-going Engagement**).

9.1.2.2 Categorising end-users

In this section, I explore the way in which we categorised end-users, the strengths and weaknesses of our approach, and the alternative categorisation approaches we could have used. The typology of end-user groups developed during the Framing Workshop highlighted several relevant end-user sectors at different scales, including: (i) global/regional; and (ii) national/sub-national (Dudley *et al.* 2014). The typology also summarises and exemplifies why and how each end-user group might use the KBA Standard. In addition to the sector categorisations, my practitioner partners and I also categorised end-users by UN Region to test our hypotheses (**Chapter 7**). Categorising end-users during the end-user breakout group at the Framing Workshop corresponds to a form of bottom-up reconstructive stakeholder-led categorisation as described by Reed *et al.* (2009), whereby the categories are defined by the stakeholders in a way that reflects their perspectives. This is another strength of the end-user engagement process (**Recommendation 4 – Categorise**).

We learned through the analysis conducted in **Chapter 7** that the categories that we used were too broad and our hypotheses overly simplistic and reductionist in nature. We have acknowledged the error of these broad assumptions in **Recommendation 4 - Categorise**. It is not unusual to group stakeholders by sector and region (Hemmati, 2002; Phillipson *et al.* 2012), which demonstrates a tendency (in research, policy, and practice) to sometimes view sectors and regions as

homogenous groups. The end-users that we engaged represent a sub-sample of existing and potential end-users of the KBA Standard and a sample population of the sectors they work for and the regions they are from. As **Chapter 7** demonstrates, we cannot assume that end-user needs and concerns would be indicative of their sectors or regions as a whole.

The end-user engagement process involved a blending of the roles of knowledge producer and user. Add to this the complexity of interpersonal relationships, networks, power, and competing vested interests and it becomes increasingly difficult to consider a categorisation approach that would be capable of representing the diverse characteristics of end-users accordingly. Attempting to categorise end-users by sector and region demonstrated our desire to adopt a one-size-fits all approach that assumed shared interests and common needs and concerns within sectors and regions. Alternative categories that we could have used include: (i) interest vs. influence; (ii) supportive vs. unsupportive; or (iii) key players, context setters, subjects, and crowd as described in Reed *et al.* (2009) and other approaches to categorisation outlined in **Chapter 3** (Table 3.9).

Categorising end-users by sector and region did, however, allow us to assess the bias and gaps in our engagement effort (details of the exact numbers of interviewees and questionnaire respondents in each category can be found in **Chapter 5**, Table 5.2 and 5.3). The gaps in our interview sampling strategy included a lack of end-users from academia and the Eastern Europe Group. The bias in our interview sampling strategy was towards the private sector, civil society, and the Western Europe and Others Group. The gaps in our questionnaire responses included a low number of responses from intergovernmental agencies and the Eastern Europe Group and the bias was again towards civil society and the Western Europe and Others Group. We did manage to elicit input from academia through the questionnaire, which was a good indication of the way in which a mixed

methods approach can help to fill gaps and create a complementary approach. The gaps indicate the sectors and regions we should have targeted with further engagement efforts earlier in the process, which was documented as a process recommendation (**Recommendation 6 – Biases and Gaps**). The biases and gaps also indicate certain sampling and response patterns related to the constituents of the networks that we targeted (mainly the IUCN network). This has implications related to whether or not we can claim that this was a truly global end-user engagement process and elicits further questions about 'who and what really counts' (Mitchell *et al.* 1997) in the context of KBAs. Can we assume that interviewing 48 end-users and providing the opportunity for other end-users to engage during an online consultation process via a questionnaire provided in English, French, and Spanish during two rounds of consultation (according to ISEAL good practice guidance) constitutes global engagement? N. Dudley alludes to similar questions in an article he wrote (WCPA, 2009), which reflects upon the stakeholder engagement process related to the establishment of the IUCN Protected Area Categories (Dudley, 2008) (one of the main precedents for the global stakeholder KBA engagement process). He noted that:

> *"…responses were patchy: high when the issue was already the subject of heated debate…non-existent in some others. This is not surprising: all of us often fail to respond to similar calls and time constraints mean that we cannot engage in debates as much as we would like. But is does raise some questions. If it's so hard to get feedback from IUCN members on a critical IUCN topic, it will probably be much harder to get a response from other stakeholders. What does participation mean in such cases? Does the fact that information is made available mean that a 'participatory approach' has really been undertaken? Does open participation become confined to those with very strong opinions and/or the time to engage?"*
>
> N. Dudley (WCPA, 2009: 16)

In the same article, N. Dudley also states that IUCN may need to augment the way that it perceives engagement processes (which is mainly as providing stakeholders with the right to engage) by including the perspective that stakeholders are providing a service to the production of knowledge. He states that:

> *"…we may need a more rigorous approach: for instance identifying people whose input is important and paying for their time; targeting stakeholders who are usually missed in participatory processes; or using random sampling to remove distortions."*
>
> N. Dudley (WCPA, 2009: 17)

This highlights the need for an organisational culture shift in IUCN's perception and use of engagement in the production of knowledge. The only documentation of the lessons learned through the Protected Areas Categories global engagement process are in an internal WCPA document and the brief newsletter article quoted here. The fact that some of the same challenges were faced and same errors committed indicates a lack of knowledge transfer and exchange between IUCN members, knowledge products, and processes. This is not an uncommon occurrence in an organisation like the IUCN with a complicated governance structure (**Chapter 2**); however, this is an important lesson learned and recommendation (**Recommendation 10 – Evaluate and Share**).

9.1.2.3 Understanding end-users

In **Chapter 6**, I combined the results obtained from the qualitative interviews and the quantitative questionnaire. Five main categories and 11 codes emerged from the analysis of the qualitative interview data, which informed the development of 17 quantitative questionnaire items. This section addresses the research question: '*how did the IUCN Task Force engage end-users?*'

As discussed in **Chapter 4** and demonstrated in **Chapter 6**, this thesis used a mixed methods action research approach to investigate, document, and analyse end-user needs and concerns. The combined use of qualitative and quantitative data in this thesis is informative and provides both depth and breadth of understanding (**Recommendation 5 – Mixed Methods**); however, it also reveals the complexity of the issues, the diversity of perspectives, and the difficulty involved in trying to

elicit, explore, and integrate this type of input into a global engagement process. This context is particularly challenging in terms of the urgency of action required to slow biodiversity loss and the limited time and resources available for knowledge transfer, exchange, and stakeholder engagement activities (**Recommendation 8 – Resources**). Understanding how to use these mixed methods to engage global stakeholders in a meaningful way and in a landscape of limited time and resources is a major challenge in need of further research and innovation.

The use of mixed methods to engage end-users was one component of the broader global stakeholder engagement process that the IUCN Task Force has referred to as the most consultative process that the IUCN has ever undertaken. Despite the fact that this may be the case, there was often a tendency during the process to measure and report the quantity of engagement over the quality of engagement (i.e. the number of people engaged, the number of workshops convened, and the number of comments received) rather than thinking more deeply about the quality of our engagement efforts. The risk in doing this is that it focuses on instrumental engagement approaches and does not consider more meaningful goals or objectives beyond quantification. This thesis has contributed towards bridging the gap between stakeholder engagement theory and practice through the investigation of stakeholder engagement in a global context. One of the engagement process recommendations that emerged from this mixed methods action research approach was the importance of professional advice on and support for designing and implementing engagement processes (**Recommendation 9 - Facilitation**). In the transdisciplinary context of IUCN, conservation professionals often find themselves in charge of convening global engagement processes, for which they may not always be adequately equipped with the appropriate skills, experience, knowledge, or resources to effectively design and implement. When discussing these concerns with one of my practitioner partners, he agreed that:

> *"We all do [stakeholder engagement] more and more and when I [first convened and facilitated a process like this one] I was way outside my comfort zone or experience. What happens is that we throw in someone new and they make all the same mistakes over again. This might be good for personal growth, but we could shortcut some of this through the sharing of lessons learned."*
>
> N. Dudley (personal correspondence, 11/11/16)

Despite this, IUCN has maintained a strong reputation for its ability to facilitate and convene global stakeholder engagement processes:

> *"This [the KBA global engagement process] draws on IUCN's demonstrated power in convening scientific stakeholder processes; excellent examples include the processes to develop the IUCN Red List categories and criteria and to refine the PA management categories."*
>
> IUCN (2011: 5)

Despite IUCN not always having access to the knowledge and resources needed to conduct engagement processes according to good practice (evidenced by some of the purpose, process, output, and outcome recommendations here and reflections on lessons learned from the Protected Area Categories engagement process (WCPA, 2009)), they consistently mobilise diverse stakeholders and knowledge from their vast network in a consensus-based, democratic decision-making structure, framed by their member-focused governance mechanisms, towards the development of global knowledge products that continue to inform research, policy, and practice (Universalia, 2015). The end-user engagement process and the wider global stakeholder engagement process has set a new precedent for how IUCN engages stakeholders in the development of its knowledge products. This research contributes to a culture of continuous improvement and exemplifies how learning-by-doing can help to close the gap between stakeholder engagement theory and practice.

9.1.3 Outputs and outcomes of engagement: informing the KBA Standard

9.1.3.1 Areas of convergence and divergence in end-users' needs and concerns

This section explores another research question addressed in **Chapter 6**: '*what did the IUCN Task Force learn about end-user opinions?*' Through our mixed methods approach, we learned a great deal about specific and diverse end-user needs and concerns. During the analysis of the qualitative and quantitative data, clear areas of convergence and divergence between end-users' opinions became apparent. Two areas of divergence were apparent from the qualitative data: ranking and existing approaches; and four main areas of divergence were evident from the quantitative data: issue of scale, prioritisation, costs, and informing land-use decision-making. These issues of divergence correspond with areas of debate in the broader conservation discourse and it is important to note that the end-user engagement process revealed and captured these topics and that the IUCN Task Force attempted to address them, where possible (as outlined in **Chapter 8**). Without the use of this mixed methods approach, some of these topics may have been overlooked in the context of the KBA Standard. They also indicate areas that will require further consideration, particularly through the on-going engagement of end-users through the KBA Consultative Forum.

9.1.3.2 A plurality of perspectives both within and between sectors and regions

The analysis of the qualitative interview data and the overall quantitative questionnaire data led to the development of two hypotheses about how end-users' needs and concerns were shared within end-user groups, which were tested in **Chapter 7**. The research question that **Chapter 7** addressed was: '*how did end-user opinions differ by sector and region?*' The results showed no statistically significant differences in opinion between sector groups and very limited statistically

significant differences in opinion between UN Regions, which was contrary to our hypotheses.

This discovery has important implications for how we identify, categorise, and engage different end-users, as explored above and documented in **Recommendation 3 – Define and Identify** and **Recommendation 4 – Categorise**. It also highlights the complex and individual nature of end-user opinions, which are inevitably shaped by more than simply their sector or UN Region. This intragroup diversity of opinion demonstrates that although end-users can be categorised into sector or UN Region groups, the usefulness of this form of categorisation is limited. Individuals have different histories and values and are exposed to different social norms, cultures, and institutional incentives and structures (Contandriopoulos *et al.* 2010) that influence their opinions. This complexity is commonly oversimplified by:

> *"…reifying users or producers as homogeneous groups…and disregarding the complexity of human motivations by attributing intrinsic group-based preferences or interests to users…"*
>
> Contandriopoulos *et al.* (2010: 456)

This demonstrates that there are a set of common misconceptions and oversimplifications that are common in practice and further illustrates the need to bridge theory and practice.

9.1.3.3 Reflecting upon, learning from, and incorporating end-user input

In **Chapter 8** I explored the process and outcomes of engaging end-users through the use of a summative evaluation. This involved evaluating our efforts against a set of principles of good practice in international standard setting, describing the evolution of the KBA governance structure, examining how end-users' needs and concerns were addressed, and reflecting upon and documenting the purpose, process, outputs, and outcomes through a set of recommendations for future practice. The research question that **Chapter 8** addressed was: '*how did the IUCN Task Force use end-user opinions to inform the development of the KBA Standard?*'

This research is underpinned by the theoretical and conceptual notions of knowledge transfer, knowledge exchange, and stakeholder engagement introduced in **Chapter 3**. The summative evaluation presented in **Chapter 5** (purpose and process) and **Chapter 8** (process and outcomes) enabled my practitioner partners and me to reflect upon the purpose, process, outputs, and outcomes in a systematic way that is not often accounted for or designed into applied processes and practices of this nature. From this, we developed a schematic representation of our approach (**Chapter 5**, Figure 5.3) and a set of recommendations (**Chapter 8**, Table 8.1) that we hope will add further transparency and legitimacy to the process and help to inform future processes.

9.2 Reflections and contributions

9.2.1 Theoretical and methodological reflections

This research involved working *with* the IUCN Task Force *on* the end-user engagement process *for* the development of the KBA Standard. This blended use of social science with, on, and for conservation enabled a more holistic and multi-faceted research process; however, this did not come without certain challenges. I

explore my methodological and theoretical choices here to reflect upon the design, implementation, and writing up of this research.

9.2.1.1 'Mode 1' and 'Mode 2' knowledge production and use

The development of the KBA Standard involved four main stakeholder engagement components used to mobilise and produce knowledge, some of which exemplify 'Mode 1' characteristics (such as the development and testing of the criteria and thresholds through the technical workshops) and others that more closely relate to 'Mode 2' (such as the end-user engagement process and the online consultation) (Gibbons *et al.* 1994; Nowotny *et al.* 2003).

Both 'Mode 1' and 'Mode 2' knowledge production were valuable and necessary in the development of the KBA Standard. 'Mode 1' knowledge production was needed for the technical scientific elements. 'Mode 2' was needed due to the application and user-oriented transdisciplinary elements and the diverse sectors and regions with a stake or interest in the application of the KBA approach. The global stakeholder engagement process involved bridging academic disciplines and stakeholder groups and eliciting diverse input to better understand needs and concerns and to consider how these could be addressed (Brown, 2010). The stated aim of the process was:

> "*…to develop a new globally agreed standard that draws and builds on existing approaches in a way that best advances the biodiversity conservation agenda, while responding to end-users needs for a* ***scientifically rigorous*** *yet* ***pragmatic*** *methodology for practitioners*."
>
> IUCN (2012b: 2) – emphasis added

This shows an awareness of and distinction between rigorous science and pragmatism; however, despite this apparent awareness, concerns that the engagement processes could be perceived as interfering with the scientific process

remained. A good example is the following comment received from one of my practitioner partners during the summative evaluation:

> *"It [i.e. the end-user engagement process] did not change the scientific approach or scientific nature of the process."*
>
> S. Woodley (summative evaluation)

End-users also commented on the distinction between rigorous science and pragmatism during the interviews. In the summary of end-user concerns in Dudley *et al.* (2014) we state that one concern that emerged from the interviews was that the KBA Standard would create:

> *"An overly academic process rather than a pragmatic process that has a chance of being implemented."*
>
> (p.9)

One private sector end-user group stated that the KBA approach needed to find a:

> *"Balance between developing a scientifically robust model supported by strong evidence and a pragmatic, usable tool that still works in data poor environments and without excessive cost."*
>
> Dudley *et al.* (2014: 43)

These comments indicate that some perceive 'Mode 1' and 'Mode 2' as mutually exclusive while others see them as complementary. The IUCN Task Force could have developed the KBA Standard in isolation from an understanding of broader stakeholder needs and concerns, but if stakeholders (particularly end-users) did not feel engaged in the process or did not perceive the way it was produced as being transparent and legitimate then, I believe, the likelihood of it being implemented would have be limited. Equally, 'Mode 1' knowledge production is essential to the credibility of the KBA Standard and is perceived to limit scrutiny based upon a lack of objectivity and rigour.

This interplay between the need for scientific rigour and pragmatism exemplifies the distinction between 'Mode 1' and 'Mode 2' knowledge production in this context. The global stakeholder engagement process attempted to strike a balance by using multiple components that encapsulated both 'Mode 1' and 'Mode 2' approaches to the production of knowledge on places of importance for biodiversity.

9.2.1.2 Reflecting upon the use of a mixed methods action research approach

Here I reflect upon the opportunities and challenges related to my use of a grounded mixed methods action research approach to working *with* the IUCN Task Force *on* the end-user engagement process *for* the development of the KBA Standard.

The grounded approach that I used required my practitioner partners and me to remain adaptive, exploratory, and open-minded. In doing so, we jointly focused on addressing the research questions and worked collaboratively to understand the purpose, improve the process, document the outputs, inform the outcomes, and develop a set of recommendations. As described in **Chapter 4**, action research is characterised by certain benefits and challenges; however, I believe that it was the most appropriate research approach for this thesis. It enabled me to be directly embedded in the work of the IUCN Task Force while also investigating the engagement process as a participant-as-observer. This was, however, an unusual and challenging approach in many ways and my supervisors who were outside the process were important in helping to test my thinking and my assumptions throughout my research process (Whyte, 1991).

In combination with my action researcher role, I also took on multiple roles within the IUCN Task Force, encompassing: member, participant, observer, researcher, and volunteer. These different roles were part of the reciprocal arrangement that I established with the IUCN Task Force but they also relate to the way in which the IUCN operates, which is based upon a blend of membership, partnership, collaboration, volunteerism, and in kind support from a vast network of individuals from different sectors and regions. Although these multiple roles provided many benefits (both personally, professionally, and in relation to my research) there were times when the lines between these roles became slightly blurred. For example, my multiple roles increased the risk of adopting the worldview of the social setting being observed (i.e. 'going native'); however, my role as an action researcher allowed for my approach to be less strictly structured and more personal than other approaches such as strict forms of observation. In fact, by allowing myself to adopt the worldview of the IUCN Task Force, I was then able to better understand where they were coming from and why they made certain comments, associations, and decisions.

During the participant observation phase of my research, I was quite amazed by how open and honest people within the IUCN Task Force and wider IUCN network were with me and how intrigued (if also sometimes wary) they were about the research I was doing. Many stories were shared, particularly in the evenings during dinner and over drinks. Although these informal discussions were off the record, I found it difficult to switch off my observations and to draw a line between being a researcher and being a colleague, friend, and confidant. This doubling of consciousness (Bourdieu, 2003) was sometimes difficult to sustain. These experiences help to highlight both the opportunities and challenges I faced as a result of the research approach I chose.

Action research has been criticised for being too partisan and encouraging prejudices in favour of a particular cause (Bryman, 2008), which required me to remain aware of the limitations of my approach and to be critical of my research process and outcomes. Related to this was the need to differentiate between 'I' and 'we' in terms of distinguishing between the role I played in the research and the role and work of the collective IUCN Task Force (including myself as an IUCN Task Force member). Throughout this thesis, I have tried to ensure that I have provided sufficient credit to the collaborative elements of this process, whilst also being aware of the need to take ownership of the components of the research that are my own. There was a slight tension that developed here between the multiple roles that I assumed. I managed to account for this by being explicit about the difference between 'I' and 'we' at the beginning of the thesis (**Chapter 4**) and by involving my practitioner partners, particularly T. Brooks as my external supervisor, in the drafting and editing of the work to ensure I was transparently and accurately depicting our different roles and perspectives.

My use of a grounded approach relied upon my impartiality to allow relevant theories and concepts to emerge from my data and experiences; however, I was acutely aware that the multiple roles that I was juggling within the IUCN Task Force were likely to influence my ability to remain fully impartial. My initial approach was relatively neutral, yet admittedly slightly naïve, as I was transitioning from the perspectives I had adopted through my earlier academic and professional experiences in the natural sciences. I therefore had little to no understanding of the concepts and theories that would eventually underpin this thesis, which allowed me to see the KBA process with fresh eyes and few preconceptions. This did, however, result in the need to retrospectively discover and integrate the concepts, theories, and existing bodies of literature that I now draw from in this thesis.

I knew throughout the process that I needed to adopt the role of a 'critical friend', as discussed in Blackstock *et al.* (2015); however, I found it challenging to scrutinise and criticise the work of people who had become colleagues and friends and who I knew were simply doing the best they could with the knowledge and resources at their disposal. The trust that was built through my relationships with my practitioner partners was invaluable in terms of access to the process, documents, decision-making, and data and my own personal and professional growth; however, the reciprocal interaction that we developed may have influenced my ability to fully critically analyse and reflect upon the purpose, process, outputs, and outcomes of engaging end-users in the development of the KBA Standard (Pain 2004, Blackstock *et al.* 2015).

I also sometimes found it difficult to share my research findings with my practitioner partners. This was due to a few different things, including: (i) disciplinary differences in what is viewed as useful and valid data, research, and writing; (ii) the IUCN Task Force being extremely stretched in terms of resources and working towards a different set of priorities and deadlines; (iii) the moving target of both the KBA Standard and my research; and (iv) the resulting changing nature of my research questions and focus made me feel slightly uncomfortable when reaching out to my practitioner partners as each time I changed my focus I felt as though I was losing credibility with my collaborators. I know now that I should have endeavoured to keep them more closely informed about my research design, process, and outcomes as they have all been incredibly supportive, patient, and open-minded throughout this research.

The grounded approach that I used also resulted in some confusion and uncertainty regarding which aspect of the KBA approach and/or process to focus on and why. There were (and are) so many fascinating elements of the KBA Standard and the associated global stakeholder engagement process. In addition to those elements

that I found interesting, there were also the lines of enquiry that were of interest to others and the more applied questions that I felt might serve to inform this and future processes.

Finally, determining how to most effectively structure this thesis has been a practical challenge due to the unconventional and transdisciplinary nature of the research. My action research and emergent approach felt as though, in many ways, it didn't fit into a traditional thesis structure. Typically, the researcher has sole responsibility for the research design, process, outcomes, and discussion. My practitioner partners were key collaborators in so many aspects of the work and I was often required to go with the flow of the existing structure and timing of the broader global stakeholder engagement process. I have addressed this challenge by writing up the research in a chronological way, where possible, and by attempting to be honest and transparent about the iterative and collaborative nature of the evolution of my thinking and approach.

9.2.1.3 Evaluating the purpose, process, outputs, and outcomes

My practitioner partners, N. Dudley in particular, have stated that my involvement in the end-user engagement process has resulted in broader engagement with end-users than would otherwise have been possible. Initially enabling more engagement was one of the goals of my action research approach; however, I soon realised how important it was to consider the purpose, process, outputs, and outcomes, and the quality of our engagement efforts rather than being concerned with the number of people engaged, the number of workshops held, or the number of comments we received. This incremental change in the way my practitioner partners and I viewed the purpose, process, outputs, and outcomes of engaging end-users is important and it led to the development of the summative evaluation to assess these in a systematic way.

The summative evaluation was a good way to reflect upon the process with my practitioner partners and, although it is something that should be done in practice, people rarely take the time or resources to systematically reflect upon, document, and share what went well and what didn't work so well. Redford and Taber (2000) and Knight (2006) discuss the importance of 'writing the wrongs', meaning the importance of documenting our failings to learn from one another. The authors emphasise the importance of describing and sharing failings for learning how to do effective conservation; however, this also applies to learning how to do effective engagement. Conservation professionals are not accustomed to sharing failings due to competition for funding, the importance of reputation, the need to appear efficacious, and the urgency of action required to address ongoing environmental crises (Knight, 2006). Redford and Taber (2000) emphasise the importance of acknowledging and openly documenting failures to promote a 'safe-fail' culture that is imperative for learning and adapting.

The summative evaluation that I used to reflect upon the purpose, process, outputs, and outcomes with my practitioner partners served as a tool for learning, for sharing our successes but also our failures, and to elicit lessons learned and recommendations that may not otherwise have been acknowledged, documented, or shared. This is a contribution towards 'writing the wrongs' in this context in the hope that our learning and experiences can inform future similar processes.

9.2.2 Contributions

In this section I separate the contributions that this research has made into two categories: KBA context-specific contributions and more generalisable contributions.

The KBA context-specific contributions include:

1. End-user interviews: these are documented in Dudley *et al.* (2014) and the in-depth analysis of the qualitative data is documented in this thesis.

2. End-user questionnaire: this was developed based upon the analysis of the qualitative interview data and was included in the wider KBA online consultation process and analysed in this thesis. The results were used to test hypotheses and to compare and corroborate the interpretation of the qualitative interview data.

3. Informing the development of the KBA Standard: the illumination of areas of convergence and divergence in end-users' needs and concerns through the use of mixed methods enabled a diversity of perspectives to be integrated and/or addressed during the development of the KBA Standard and the establishment of its associated governance structures.

4. Summative evaluation: the use of a summative evaluation process with practitioner partners provided a systematic way to assess and reflect upon the purpose, process, outputs, and outcomes and led to the development of a set of recommendations for future practice.

5. KBA Consultative Forum: the establishment of an on-going engagement mechanism for end-users to continue to provide input and feedback on the use of the KBA Standard and associated data and to continue to communicate their needs and concerns. This was developed as a direct outcome of the end-user engagement process.

6. Documentation, analysis, and synthesis: combined analysis of the purpose, process, outputs, and outcomes provides a new precedent for IUCN's approach to global stakeholder engagement.

The generalisable contributions include:

1. Theory and practice: the close interplay between stakeholder engagement theory and practice provides new insight into the use of 'Mode 1' and 'Mode 2' knowledge production in the context of a global stakeholder engagement process.

2. Mixed methods action research: the use of a blend of research approaches and methods to work *with*, *on,* and *for* conservation at the global scale provides a new, if challenging, way of considering how social science research can both collaboratively and critically inform conservation research, policy, and practice.

3. International good practice: the tailored use of principles of good practice in international standard setting to evaluate an end-user engagement process provides a way to assess, reflect, document, and share strengths and weaknesses to inform learning and practice.

4. Recommendations: the development of a set of purpose, process, output, and outcome lessons learned and recommendations based upon a summative evaluation and an assessment against principles of good practice in international standard setting provides a step towards openly sharing successes and failures to bridge the gap between theory and practice and to transfer knowledge towards improving future global engagement processes.

9.3 Further research directions

Three further lines of enquiry are briefly outlined in this section.

First, it would be beneficial to evaluate the purpose, process, outputs, and outcomes with the end-users themselves in a participatory way. As the KBA Standard is finalised, it is now possible to ask them about their perceptions of the process and outcomes and if/how their needs and concerns have been incorporated and/or addressed. It would also be advantageous to investigate whether the process has influenced the likelihood of them using the KBA Standard in the future (i.e. how the process influenced legitimacy, uptake, buy-in, and diffusion of the KBA approach). Comparing their perspectives to those of the IUCN Task Force would also help to either corroborate the evaluation outcomes or demonstrate areas or topics where differences in opinion exist between knowledge producers and knowledge users. If this were to involve the same end-users that we engaged through the interviews and questionnaire, we could also assess temporal changes in opinion that may have taken place as a result of the evolution of the KBA Standard.

Second, the next phase in the KBA process involves the implementation of the KBA Standard. There are several challenges related to implementing the KBA Standard, some of which have been highlighted in this thesis (i.e. data, timing, resources, prioritisation). One way to explore how this global approach might be applied in different regional, national, and local contexts would be to conduct research on 'implementation futures' in specific countries. This would involve the exploration of different storylines or scenarios related to plausible futures related to the implementation of the KBA Standard in different contexts and places. This could be linked to the planned capacity building process for the implementation of the KBA Standard and could be undertaken through a Delphi process (Linstone and Turoff, 2002) or qualitative scenario storylines (Rounsevell and Metzger, 2010). This

would provide important knowledge and understanding for how KBAs may (or may not) fit with broader land-use decision-making, policy contexts, and data availability.

Third, further mixed methods action research that uses of a blend of research approaches and methods to work *with*, *on,* and *for* specific fields or contexts should be encouraged and supported. This transdisciplinary mixed methods approach can both collaboratively and critically inform research, policy, and practice. Additional research using this type of approach would contribute to improved understanding of its efficacy in new contexts and at different scales.

Further future academic contributions include:

1. A peer-reviewed journal article focused on the end-user engagement purpose, process, outputs, and outcomes and the use of a mixed methods action research approach.

2. A peer-reviewed journal article focused on a comparison and consolidation of lessons learned and recommendations from other similar IUCN global stakeholder engagement processes (including for example: IUCN Red List of Threatened Species, IUCN Protected Areas Categories, IUCN Red List of Ecosystems, and IUCN Green List of Protected and Conserved Areas).

9.4 Conclusions

The novelty of this research can be attributed to the new knowledge and understanding that was gained through using a mixed methods action research approach to work *with* the IUCN Task Force *on* the end-user engagement process *for* the development of the KBA Standard. This thesis contributes to improving

understanding on how knowledge is produced, transferred, exchanged, and used in the context of an applied global stakeholder engagement process.

The aim of this thesis was to analyse the end-user component of the global stakeholder engagement process that informed the development of the KBA Standard. The main objectives of this research were to: (i) clarify the purpose of engaging end-users by examining the use of normative, instrumental, and substantive rationales; (ii) use mixed methods to gain an understanding of end-users' needs and concerns; (iii) categorise and analyse end-users' needs and concerns by sector and region; (iv) assess the end-user engagement process through a summative evaluation; (v) examine how end-user input was used to inform the development of the KBA Standard; and (vi) develop a set of recommendations related to global end-user engagement practice.

The analysis indicated that the IUCN Task Force used a blend of instrumental and substantive rationales to justify engaging end-users. Five main categories of end-user needs and concerns emerged from the analysis of the qualitative interview data: (i) the need for communication and local stakeholder engagement; (ii) the potential for the KBA Standard to either complement or conflict with existing approaches; (iii) the need for clarity regarding the scale at which KBAs can be identified (i.e. global, regional, and/or national); (iv) concerns about the implementation of the KBA Standard, including data availability, timeliness, and resources; and (v) comments about how KBAs inform decision-making, including management options, sustainable use, and prioritisation. These categories were examined in depth through the qualitative interviews and in breadth through the quantitative questionnaire.

The results demonstrated a high level of convergence in opinion on many topics; however, four topics resulted in a divergence in opinion between end-users: (i) the implications of the scale at which KBAs are identified; (ii) the prioritisation of KBAs

over other areas; (iii) whether KBA data should be made freely available; and (iv) whether development activities should be permitted in KBAs. These areas of divergence were analysed further by categorising end-user questionnaire responses by sector and region. The results have important implications for how end-users are identified, categorised, and engaged and highlight the complex and individual nature of end-users' needs and concerns. A summative evaluation was used to reflect upon and learn from the purpose, process, outputs, and outcomes of engaging end-users. Many of the topics that emerged from the analysis of the qualitative and quantitative data were incorporated into the development and finalisation of the KBA Standard. The remainder have been presented to the KBA Partnership for further consideration within the KBA Consultative Forum. There are several lessons that we learned about engaging end-users, which we presented as purpose, process, output, and outcome recommendations to inform future processes.

This research offers contributions towards closing the gap between stakeholder engagement theory and practice through the analysis of the strengths and weaknesses of the engagement approaches used and through the development of recommendations to inform future similar processes. This thesis also provides insight into the challenges and benefits of using a mixed methods action research approach to investigate global stakeholder engagement practice.

Epilogue

The primary aim of this research was to work with the IUCN Task Force to understand and evaluate the purpose, process, outputs, and outcomes of engaging end-users towards improved reflection and engagement practice. This epilogue offers additional reflections on the stakeholder engagement process nine months after the launch of the KBA Standard and three months after my PhD viva. This provides a space to discuss my reflections on the process out with my action researcher role and from a slightly broader and more critical perspective.
This research focused on a particular global engagement process and institutional setting (the convening of the global stakeholder engagement process by the IUCN, which informed the development of the KBA Standard). The IUCN received feedback early on in the process from Knight *et al.* (2007) that the KBA Standard should not be developed and implemented in a top-down way and should instead aim to engage stakeholders using a bottom-up approach. This explains the origins of the global stakeholder engagement process that ensued and that was the focus of this thesis.

This bottom-up rhetoric originates from recognition of the shortcomings of top-down approaches; however, careful consideration of the quality, validity and ethics of so called bottom-up stakeholder engagement is also needed (Cooke and Kothari, 2001). Transparent communication of the aims and objectives of stakeholder engagement is often lacking and the techniques and tools that are used are not always chosen based upon their applicability and appropriateness to the specific context. By reflecting more critically upon the power dynamics inherent to all forms of stakeholder engagement, we can learn from mistakes and develop recommendations to inform future practice.

I did not deeply question the politics and power relations inherent to the discourse investigated in this thesis. This was partly related to the limitations associated with my action researcher role and also due to the fact that investigating the process from this perspective would have required an entirely different set of research questions and methods. I discussed power briefly in **Chapter 9** (Section 9.1.1.2) in relation to the different rationales that are used for stakeholder engagement, with each being associated with different forms of power ranging from the desire to empower stakeholders towards encouraging the proliferation of existing power structures. It would have been revealing to undertake an institutional or organisational ethnography of the IUCN Task Force or to conduct a social network analysis of the different stakeholders involved in the development of the KBA Standard to further analyse the power relations and complex relationships between stakeholders. These are additional research avenues that could be explored in relation to future processes.

I believe that the decision-making processes involved in the development of the KBA Standard (on a spectrum of decision making styles, from fully technocratic to fully deliberative) remained quite technocratic despite the wide, and frequently celebrated, global engagement efforts that informed its development. **Figure E.1** depicts where I would situate the global consultation process on this spectrum.

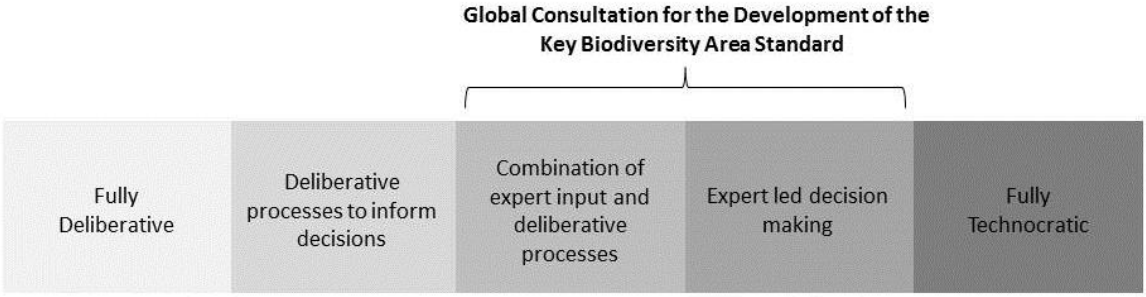


Figure E.1. Different styles of decision-making (adapted and modified from Hammond and Shackley (2010)).

The decision-making power related to the development of the KBA criteria and thresholds remained almost exclusively with expert scientists. Experts from existing approaches (such as those listed in **Chapter 2**, Table 2.1) had particularly strong power and influence over the development of the KBA Standard. The end-user and additional stakeholder engagement processes quite clearly represent forms of consultation rather than a deeper form of deliberation that could be categorised as true participation. Further investigation of the role of expertise and of those who held the decision-making power would help to highlight the political processes and negotiations involved in engaging experts, end-users, and additional stakeholders in the development of the KBA Standard.

I argue, in **Chapter 9** (Section 9.1.1.2), that despite the fact that the end-user engagement investigated in this thesis closely resembles knowledge transfer and consultation, the establishment of the KBA Consultative Forum offers an opportunity to encourage a transition towards increased levels of participation and knowledge exchange. There are a number of potential pitfalls that the KBA Partnership and KBA Committee should seek to avoid with the KBA Consultative Forum. The recommendations in **Chapter 8** (Table 8.1) provide a good checklist against which to cross check plans and actions during the establishment and management of the KBA Consultative Forum. The main recommendations include: (i) clearly communicating the objectives of the KBA Consultative Forum; (ii) identifying those who should be involved in a participatory way (avoiding targeting only the typical end-users); (iii) engaging with the KBA Consultative Forum in diverse ways to elicit varied input through different mechanisms; (iv) addressing biases and gaps in representation; (v) establishing a clear and transparent decision-making process for how input from the KBA Consultative Forum will be used; (vi) carefully considering the resources needed to ensure meaningful engagement with end-users; and (vii) evaluating, documenting, and sharing the

outputs and outcomes of the knowledge transfer and knowledge exchange resulting from engagement with the KBA Consultative Forum.

I look forward to seeing how the KBA Standard continues to evolve over time and hope that this research serves to inform future stakeholder engagement practice within the IUCN and beyond.

References

Adams, W.M., 2004. *Against extinction: the story of conservation*, Earthscan.

Ambal, R.G.R., Duya, M.V., Cruz, M.A., Coroza, O.G., Vergara, S.G., De Silva, N., Molinyawe, N. & Tabaranza, B., 2012. Key biodiversity areas in the Philippines: priorities for conservation. *Journal of Threatened Taxa*, *4*(8), pp.2788-2796.

Anadón-Irizarry, V., Wege, D.C., Upgren, A., Young, R., Boom, B., Leon, Y.M., Arias, Y., Koenig, K., Morales, A.L. & Burke, W., 2012. Sites for priority biodiversity conservation in the Caribbean Islands Biodiversity Hotspot. *Journal of Threatened Taxa*, 4(8), pp.2806–2844.

Anderson, S., 2002. *Identifying Important Plant Areas: A Site Selection Manual for Europe, and a basis for developing guidelines for other regions of the world*. Plantlife International, London.

Arnstein, S.R., 1969. A Ladder of Citizen Participation. *Journal of the American Institute of Planners*, 35(4), pp.216–224.

Baillie, J., Hilton-Taylor, C. & Stuart, S.N., 2004. *IUCN red list of threatened species: a global species assessment* J. E. M. Baillie, C. Hilton-Taylor, & S. N. Stuart, eds., Gland, Switzerland and Cambridge, UK: IUCN Publications Services Unit.

Bammer, G., 2005. Integration and Implementation Sciences: Building a New Specialisation. *Ecology and Society*, 10(2):6.

Barry, A., Born, G. & Weszkalnys, G., 2008. *Logics of interdisciplinarity*,

Barry, D. & Oelschlaeger, M., 1996. A science for survival: values and conservation biology. *Conservation Biology*, 10(3), pp.904–920.

Beierle, T.C., 2002. The quality of stakeholder-based decisions. *Risk Analysis*, 22(4), pp.739–749.

Bellamy, J.A., Walker, D.H., McDonald, G.T. & Syme, G.J., 2001. A systems approach to the evaluation of natural resource management initiatives. *Journal of environmental management*, 63(4), pp.407–423.

Bennun, L., Bakarr, M., Eken, G. & Da Fonseca, G.A., 2007. Clarifying the key biodiversity areas approach. *BioScience*, 57(57), pp.645–645.

Beyer, J.M. & Trice, H.M., 1982. The Utilization Process: A Conceptual Framework and Synthesis of Empirical Findings. *Administrative Science Quarterly*, 27(4), pp.591–622.

Bern Convention, 1982. *Bern Convention on the Conservation of European Wildlife and Natural Habitats.*

Bhaskar, R., 1978. A Realist Theory of Science. Brighton: Harvester Wheatsheaf.

Birds Directive, 1979. Council Directive 79/409/EEC. Updated to Council Directive 2009/147/EC on the conservation of wild birds in 2009.

Blackstock, K., Dinnie, L., Dilley, R., Marshall, K., Dunglinson, J., Trench, H., Harper, K., Finan, K., MacPherson, J., Johnston, E. & Griffin, A., 2015. Participatory research to influence participatory governance: managing relationships with planners. Area, 47(3), pp.254-260.

Blackstock, K., Dinnie, L., Trench, H. & Miles, G., 2011. Co-researching the Cairngorms: Supporting the Aims of, not just Researching in, the Cairngorms NationalPark. Scottish Geographical Journal, 127(1), pp.40-60.

Blackstock, K.L., Kelly, G.J. & Horsey, B.L., 2007. Developing and applying a framework to evaluate participatory research for sustainability. *Ecological Economics*, 60(4), pp.726–742.

Blaikie, N., 2009. *Designing Social Research*, Polity.

Böhme, G., Van Den Daele, W. & Krohn, W., 1983. The scientification of technology. In *Finalization in Science*. Springer, pp. 173–205.

Boyd, C., Brooks, T.M., Butchart, S.H., Edgar, G.J., Da Fonseca, G.A., Hawkins, F., Hoffmann, M., Sechrest, W., Stuart, S.N. & Van Dijk, P.P., 2008. Spatial scale and the conservation of threatened species. *Conservation Letters*, 1(1), pp.37-43.

Brannen, J., 2005. Mixed Methods Research: A Discussion Paper. *ESRC National Centre for Research Methods*, pp.1–30.

Brooks, T.M., 2010. Conservation planning and priorities. *Conservation Biology for All. Oxford University Press, Oxford*, 199219.

Brooks, T.M., Akçakaya, H.R., Burgess, N.D., Butchart, S.H., Hilton-Taylor, C., Hoffmann, M., Juffe-Bignoli, D., Kingston, N., MacSharry, B., Parr, M. & Perianin, L., 2016. Analysing biodiversity and conservation knowledge products to support regional environmental assessments. Scientific data, 3.

Brooks, T.M., Butchart, S.H., Cox, N.A., Heath, M., Hilton-Taylor, C., Hoffmann, M., Kingston, N., Rodríguez, J.P., Stuart, S.N. & Smart, J., 2015. Harnessing biodiversity and conservation knowledge products to track the Aichi Targets and Sustainable Development Goals. Biodiversity, 16(2-3), pp.157-174.

Brooks, T.M. & Matiku, P., 2011. The science-policy interface for safeguarding key biodiversity areas. *Animal Conservation*, 14(2), pp.111–113.

Brooks, T.M., Mittermeier, R.A., da Fonseca, G.A., Gerlach, J., Hoffmann, M., Lamoreux, J.F., Mittermeier, C.G., Pilgrim, J.D. & Rodrigues, A.S., 2006. Global biodiversity conservation priorities. *Science*, *313*(5783), pp.58-61.

Brown, V.A., 2010. Collective Enquiry and its Wicked Problems. *Tackling Wicked Problems Through the Transdisciplinary Imagination*, pp.61–83.

Brussard, P.F., Murphy, D.D. & Tracy, C.R., 1994. Cattle and Conservation Biology-Another View. *Conservation Biology*, 8(4), pp.919–921.

Bruyn, S.T.H., 1966. *The human perspective in sociology; the methodology of participant observation*. Englewood Cliffs, NJ: Prentice-Hall.

Bryer, J. & Speerschneider, K., 2015. *Package "likert". Functions to Analyze and Visualize Likert Type Items*.

Bryman, A., 2008. *Social research methods*, Oxford university press.

Bryman, A., 1984. The Debate about Quantitative and Qualitative Research: a question of method or epistemology? *The British Journal of Sociology*, 35(1), pp.75–92.

Burgess, J. & Chilvers, J., 2006. Upping the ante: A conceptual framework for designing and evaluating participatory technology assessments. *Science and Public Policy*, 33(10), pp.713–728.

Büscher, B., Sullivan, S., Neves, K., Igoe, J. & Brockington, D., 2012. Towards a synthesized critique of neoliberal biodiversity conservation. *Capitalism nature socialism*, *23*(2), pp.4-30.

Butchart, S.H., Scharlemann, J.P., Evans, M.I., Quader, S., Arico, S., Arinaitwe, J., Balman, M., Bennun, L.A., Bertzky, B., Besancon, C. & Boucher, T.M., 2012. Protecting important sites for biodiversity contributes to meeting global conservation targets. PLoS One, 7(3), p.e32529.

Callicott, J., 1990. Whither conservation Ethics? *Conservation Biology*, 4(1), pp.19–30.

Caplan, N., 1979. The Two-Communities Theory and Knowledge Utilization. *American Behavioral Scientist*, 22(3), pp.459–470.

Carifio, J. & Perla, R.J., 2007. Ten Common Misunderstandings, Misconceptions, Persistent Myths and Urban Legends about Likert Scales and Likert Response Formats and their Antidotes. *Journal of Social Sciences*, 3(3), pp.106–116.

CBD, 2013. *Quick guides to the Aichi Biodiversity Targets. Version 2. https://www.cbd.int/doc/strategic-plan/targets/compilation-quick-guide-en.pdf*

CBD, 1992. Convention on biological diversity. *Diversity*, p.30. Available at: http://www.cbd.int/doc/legal/cbd-en.pdf.

Chan, K., 2008. Value and advocacy in conservation biology: Crisis discipline or discipline in crisis? *Conservation Biology*, 22(1), pp.1–3.

Charmaz, K., 2008. Grounded Theory as an Emergent Method. *Handbook of Emergent Methods*, (3), pp.155–170.

Chess, C. & Purcell, K., 1999. Public participation and the environment: Do we know what works? *Environmental Science and Technology*, 33(16), pp.2685–2692.

Cincotta, R.P., Wisnewski, J. & Engelman, R., 2000. Human population in the biodiversity hotspots. *Nature*, 404(6781), pp.990–992.

Contandriopoulos, D., Lemire, M., Denis, J.L. & Tremblay, É., 2010. Knowledge exchange processes in organizations and policy arenas: a narrative systematic review of the literature. Milbank Quarterly, 88(4), pp.444-483.

Cooke, B. & Kothari, U. (eds.)., 2001. *Participation: The new tyranny?* Zed books.

Cook, B.R., Kesby, M., Fazey, I. & Spray, C., 2013. The persistence of 'normal'catchment management despite the participatory turn: Exploring the power effects of competing frames of reference. Social Studies of Science, p.0306312713478670.

Cornwall, A. & Jewkes, R., 1995. What is participatory research? *Social science & medicine*, 41(12), pp.1667–1676.

Crowards, T., 1997. Nonuse Values and the Environment: Economic and Ethical Motivations. *Environmental Values*, 6(2), pp.143–167.

Darwall, W.R.T. & Vié, J.C., 2005. Identifying important sites for conservation of freshwater biodiversity: Extending the species-based approach. *Fisheries Management and Ecology*, 12(5), pp.287–293.

Dasmann, R.F., 1968. *A Different Kind of Country*, Macmillan.

David, P. A., 1996. Science Reorganized? Postmodern Visions of Science and the Curse of Success. *2nd International Symposium on Research Funding*, (0), pp.136–191.

Davidson, S., 1998. Spinning the wheel of empowerment. *Planning*, 1262(3), pp.14–15.

Davies, H., Nutley, S. & Walter, I., 2008. Why "knowledge transfer" is misconceived for applied social research. *Journal of Health Services Research & Policy*, 13(3), pp.188–190.

Davies, A.L. & White, R.M., 2012. Collaboration in natural resource governance: reconciling stakeholder expectations in deer management in Scotland. *Journal of environmental management*, *112*, pp.160-169.

DeLong, D.C.J., 1996. Defining Biodiversity. *Wildlife Society Bulletin*, 24(4), pp.738–749.

Doucet, A., 2008. "From her side of the gossamer wall (s)": reflexivity and relational knowing. *Qualitative Sociology*, 31(1), pp.73–87.

Drew, G.S., 1994. The scientific method revisited. *Conservation Biology*, 8(2), pp.596–597.

Dudley, N., 2008. Guidelines for applying protected area management categories. *IUCN*, 46(2).

Dudley, N., Boucher, J.L., Cuttelod, A., Brooks, T.M. & Langhammer, P.F., 2014. Applications of Key Biodiversity Areas: end-user consultations. Cambridge, United Kingdom and Gland, Switzerland: IUCN.

Dudley, N., 2008. Guidelines for applying protected area management categories. IUCN.

Durham E., Baker H., Smith M., Moore E. & Morgan V., 2014. The BiodivERsA Stakeholder Engagement Handbook. BiodivERsA, Paris (108 pp).

Edgar, G.J., Langhammer, P.F., Allen, G., Brooks, T.M., Brodie, J., Crosse, W., De Silva, N., Fishpool, L.D., Foster, M.N., Knox, D.H. & Mccosker, J.E., 2008. Key biodiversity areas as globally significant target sites for the conservation of marine biological diversity. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 18(6), pp.969-983.

Edquist, C., 1997. *Systems of innovation: technologies, institutions, and organizations*. Psychology Press.

Ehrenfeld, D., 2000. War and Peace and Conservation Biology. *Conservation Biology*, 14(1), pp.105–112.

Eigenbrode, S.D., O'rourke, M., Wulfhorst, J.D., Althoff, D.M., Goldberg, C.S., Merrill, K., Morse, W., Nielsen-Pincus, M., Stephens, J., Winowiecki, L. & Bosque-Pérez, N.A., 2007. Employing philosophical dialogue in collaborative science. *BioScience,* 57(1), pp.55-64.

Eken, G., Bennun, L., Brooks, T.M., Darwall, W., Fishpool, L.D., Foster, M., Knox, D., Langhammer, P., Matiku, P., Radford, E. & Salaman, P., 2004. Key biodiversity areas as site conservation targets. *BioScience*, *54*(12), pp.1110-1118.

Escobar, O., 2013. Transformative practices: the political work of public engagement practitioners. *Ph.D.*

Etzkowitz, H. & Leydesdorff, L., 2000. The dynamics of innovation: from National Systems and "Mode 2" to a Triple Helix of university–industry–government relations. *Research Policy*, 29(2), pp.109–123.

European Commission, 2010. Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds. *Official Journal of the European Union*, L 20, pp.7–25.

European Commission, 1992. Council Directive 92/43/ECC. *Official Journal of the European Union*, 94(1259), pp.40–52.

Evans, S., Marren, P. & Harper, M., 2001. *Important Fungus Areas: a provisional assessment of the best sites for fungi in the United Kingdom*. Salisbury, UK: Plantlife International.

Evely, A.C., Fazey, I.R.A., Pinard, M. & Lambin, X., 2008. The influence of philosophical perspectives in integrative research: A conservation case study in the Cairngorms National Park. *Ecology and Society*, 13(2).

Evely, A., Fazey, I., Reed, A.E. & Stringer, L., 2012. *Designing knowledge exchange for resilience: how people view and construct knowledge matters* (No. 2). Sustainable Learning Working Paper Series.

Evely, A.C., Pinard, M., Reed, M.S. & Fazey, I., 2011. High levels of participation in conservation projects enhance learning. *Conservation Letters*, 4(2), pp.116–126.

Fazey, I., Bunse, L., Msika, J., Pinke, M., Preedy, K., Evely, A.C., Lambert, E., Hastings, E., Morris, S. & Reed, M.S., 2014. Evaluating knowledge exchange in interdisciplinary and multi-stakeholder research. *Global Environmental Change*, *25*, pp.204-220.

Fazey, I., Evely, A.C., Reed, M.S., Stringer, L.C., Kruijsen, J., White, P.C., Newsham, A., Jin, L., Cortazzi, M., Phillipson, J. & Blackstock, K., 2013. Knowledge exchange: a review and research agenda for environmental management. Environmental Conservation, 40(01), pp.19-36.

Fiorino, D.J., 1989. Environmental risk and democratic process: a critical review. *Columbia Journal of Environmental Law*, 14, p.501.

Foster, M.N., Brooks, T.M., Cuttelod, A., De Silva, N., Fishpool, L.D., Radford, E.A. & Woodley, S., 2012. The identification of sites of biodiversity conservation significance: progress with the application of a global standard. *Journal of Threatened Taxa*, *4*(8), pp.2733-2744.

Francis, R.A. & Goodman, M.K., 2010. Post-normal science and the art of nature conservation. *Journal for Nature Conservation*, 18(2), pp.89–105.

Franco, J.L. de A., 2013. The concept of biodiversity and the history of conservation biology: from wilderness preservation to biodiversity conservation. *História (São Paulo)*, 32(2), pp.21–47.

Franklin, J., 1993. Preserving biodiversity: species, ecosystems, or landscapes? *Ecological applications*, 3(2), pp.202–205.

Freeman, R.E., 1984. Strategic management: A Stakeholder Approach. *RE Freeman–Boston: Pitman/Ballinger*.

Funtowicz, S. & Ravetz, R., 1993. Science for the Post-normal Age. *Futures*, pp.739–755.

Gale, N.K., Heath, G., Cameron, E., Rashid, S. & Redwood, S., 2013. Using the framework method for the analysis of qualitative data in multi-disciplinary health research. BMC medical research methodology, 13(1), p.117.

Gaston, K.J., 2000. Global patterns in biodiversity. *Nature*, *405*(6783), pp.220-227.

Ghilarov, A., 1996. What does "biodiversity" mean—scientific problem or convenient myth? *Trends in ecology & evolution*, 11(7), pp.304–306.

Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S., Scott, P. & Trow, M., 1994. *The new production of knowledge: The dynamics of science and research in contemporary societies*. Sage.

Gilbert, N., 2001. Research, theory and method. *Researching social life*, 2.

Glaser, Barney, G. & Strauss, Anselm, L., 1967. *The Discovery of Grounded Theory: Strategies for Qualitative Research - Barney G. Glaser, Anselm L. Strauss - Google Books*,

Glass, J.H., Scott, A.J. & Price, M.F., 2013. The power of the process: Co-producing a sustainability assessment toolkit for upland estate management in Scotland. *Land Use Policy*, 30(1), pp.254–265.

Gold, R.L., 1958. Roles in Sociological Field Observations. *Social Forces*, 36(3), pp.217–23.

Gordon, E. A, Franco, O.E. & Tyrrell, M.L., 2005. Protecting Biodiversity: A Guide to Criteria Used by Global Conservation Organizations. , (6), p.12.

Graham, I.D., Logan, J., Harrison, M.B., Straus, S.E., Tetroe, J., Caswell, W. & Robinson, N., 2006. Lost in knowledge translation: time for a map?.*Journal of continuing education in the health professions*, *26*(1), pp.13-24.

Greenwood, D.J. & Levin, M., 2007. Introduction to Action Research: Social Research for Social Change: Social Research for Social Change, p.320.

Groom, M.J., Meffe, G.K. & Carroll, C.R., 2006. *Principles of conservation biology*, Sinauer Associates Sunderland.

Grumbine, R.E., 1994. Environmental policy and biodiversity. In Island Press, p. xv, 416.

Guba, E.G., 1990. The alternative paradigm dialog. *The paradigm dialog*, pp.17–30.

Habitats Directive, 1992. Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora.

Hadorn, G.H., Bradley, D., Pohl, C., Rist, S. & Wiesmann, U., 2006. Implications of transdisciplinarity for sustainability research. *Ecological Economics*, *60*(1), pp.119-128.

Hall, B., 1975. Participatory research: An approach for change. *Convergence*, 8(2), p.24.

Hamilton, A.J., 2005. Species diversity or biodiversity? *Journal of Environmental Management*, 75(1), pp.89–92.

Hammond, J. & Shackley, S., 2010. *Towards a public communication and engagement strategy for carbon dioxide capture and storage projects in Scotland*,

Hargrove, E.C., 1992. Weak anthropocentric intrinsic value. *Monist*, 75(2), pp.183–207.

Harper, J.L. & Hawksworth, D.L., 1994. Biodiversity: measurement and estimation. *Philosophical Transactions: Biological Sciences*, 345(1311), pp.5–12.

Hayward, C., Simpson, L. & Wood, L., 2004. Still left out in the cold: Problematising participatory research and development. *Sociologia Ruralis*, 44(1), pp.95–108.

Hemmati, M., 2002. *Multi-stakeholder processes for governance and sustainability: Beyond Deadlock and Conflict*, Routledge.

Heron, J. & Reason, P., 2006. The Practice of Co-operative inquiry: Research with rather than on people. *Handbook of Action Research: Concise Paperback Edition*, p.362.

Hessels, L.K. & van Lente, H., 2008. Re-thinking new knowledge production: A literature review and a research agenda. *Research Policy*, 37(4), pp.740–760.

Hoffmann, M., Brooks, T.M., da Fonseca, G.A., Gascon, C., Hawkins, A.F.A., James, R.E., Langhammer, P., Mittermeier, R.A., Pilgrim, J.D., Rodrigues, A.S.L. & Silva, J.M.C., 2008. Conservation planning and the IUCN Red List. *Endangered Species Research*, *6*(2), pp.113-125.

Holdgate, M., 1999. *The green web: a union for world conservation*. Routledge.

Holland, R.A., Darwall, W.R.T. & Smith, K.G., 2012. Conservation priorities for freshwater biodiversity: The Key Biodiversity Area approach refined and tested for continental Africa. *Biological Conservation*, 148(1), pp.167–179.

Holmes, G., Sandbrook, C. & Fisher, J.A., 2016. Understanding conservationists' perspectives on the new-conservation debate. *Conservation biology : the journal of the Society for Conservation Biology*.

Howe, K.R., 1988. Against the Quantitative-Qualitative Incompatibility Thesis or Dogmas Die Hard. *Educational Researcher*, 17(8), pp.10–16.

Huberman, M., 1994. Research Utilization: The State of the Art Michael. *Knowledge and Policy*, 7(4), pp.13–33.

Hulme, M. & Mahoney, M., 2010. Climate change: What do we know about the IPCC?. *Progress in Physical Geography*.

Hunter, M.L., Redford, K.H. & Lindenmayer, D.B., 2014. The complementary niches of anthropocentric and biocentric conservationists. *Conservation Biology*, 28(3), pp.641–645.

IFC, 2012. Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources.

Igoe, J. & Brockington, D., 2007. Neoliberal Conservation: A Brief Introduction. *Conservation and Society*, *5*(4), p.432.

ISEAL, 2014. *Setting Social and Environmental Standards*. ISEAL Code of Good Practice. Version 6.0.

ISEAL, 2013. *Setting Social and Environmental Standards*. ISEAL Code of Good Practice. Version 5.1.

IUCN, 2016a. *A global standard for the identification of Key Biodiversity Areas: Version 1.0*, Gland, Switzerland.

IUCN, 2016b. *Statutes, including rules of procedure of the World Conservation Congress, and Regulations.*

IUCN, 2015. *Consultation Document on an IUCN Standard for the Identification of Key Biodiversity Areas*.

IUCN, 2014a. *Addendum Proposed review and petitions processes for Key Biodiversity Areas*.

IUCN, 2014b. *Development of the standard for identification of sites contributing significantly to the global persistence of biodiversity (Key Biodiversity Areas): Recommendations from the Thresholds Workshop.*

IUCN, 2014c. *Development of the standard for identification of sites contributing significantly to the global persistence of biodiversity (Key Biodiversity Areas): Recommendations from the Governance Workshop*.

IUCN, 2013. *Identifying sites that contribute significantly to the global persistence of biodiversity (Key Biodiversity Area): Criteria and Delineation Workshop report.*

IUCN, 2012a. *Consolidating the criteria for identifying sites of significance for biodiversity: a global consultation process*.

IUCN, 2012b. *Consolidating the standards for identifying sites that contribute significantly to the global persistence of biodiversity: The results of a framing workshop*.

IUCN, 2011. IUCN WCPA/SSC Joint Task Force on Biodiversity and Protected Areas: summary work plan.

IUCN, 2005. *Resolutions and recommendations*, Gland, Switzerland and Cambridge, UK.

IUCN, 2001. *IUCN Red List categories and criteria*. Species Survival Commission. IUCN.

IUCN, 1980. *World Conservation Strategy*.

Jablonski, D., Roy, K. & Valentine, J.W., 2006. Out of the Tropics: Evolutionary Dynamics of the Latitudinal Diversity Gradient. *Science (New York, N.Y.)*, 314(5796), pp.102–106.

Jacobs, K., Garfin, G. & Lenart, M., 2005. More Than Just Talk. *Environment*, 47(9), pp.8–21.

Jamieson, S., 2004. Likert scales: how to (ab)use them. *Medical Education*, 38, pp.1212–1218.

Jennings, S., 2004. *HCVF for conservation practitioners.* Proforest.

Jepson, P. & Canney, S., 2003. Values-led conservation. *Global Ecology and Biogeography*, 12(4), pp.271–274.

Johns, R. A., 2005. One size doesn't fit all: Selecting response scales for attitude items. *Journal of Elections, Public Opinion and Parties*, 15(2), pp.237–264.

Johnson Onwuegbuzie AJ, R.B., 2004. Mixed Methods Research: A Research Paradigm Whose Time Has Come. *Educational Researcher*, Vol. 33 No(7), pp.14–26.

Johnson, N., 1995. *Biodiversity in the balance: approaches to setting geographic conservation priorities*, Washington, DC: Biodiversity Support Program.

Johnson, R.B., 1998. Toward a theoretical model of evaluation utilization. *Evaluation and Program Planning*, 21(1), pp.93–110.

Jolibert, C. & Wesselink, A., 2012. Research impacts and impact on research in biodiversity conservation: The influence of stakeholder engagement. *Environmental Science and Policy*, 22, pp.100–111.

Jonas, H.D., Barbuto, V., Jonas, H.C., Kothari, A. & Nelson, F., 2014. New steps of change: looking beyond protected areas to consider other effective area-based conservation measures. *Parks*, *20*(2), pp.111-128.

Kareiva, P. & Marvier, M., 2012. What Is Conservation Science? *BioScience*, 62(11), pp.962–969.

Klein, J.T., 2004. Interdisciplinarity and complexity: An evolving relationship. *E:CO Emergence: Complexity and Organization*, 6(1–2), pp.2–10.

Knight, A.T., 2006. Failing but learning: Writing the wrongs after redford and taber. *Conservation Biology*, 20(4), pp.1312–1314.

Knight, A.T., Smith, R.J., Cowling, R.M., Desmet, P.G., Faith, D.P., Ferrier, S., Gelderblom, C.M., Grantham, H., Lombard, A.T., Maze, K. & Nel, J.L., 2007. Improving the key biodiversity areas approach for effective conservation planning. *BioScience*, *57*(3), pp.256-261.

Kouame, O.M.L., Jengre, N., Kobele, M., Knox, D., Ahon, D.B., Gbondo, J., Gamys, J., Egnankou, W., Siaffa, D., Okoni-Williams, A. & Saliou, M., 2012. Key Biodiversity Areas identification in the Upper Guinea forest biodiversity hotspot. *Journal of Threatened Taxa*, *4*(8), pp.2745-2752.

Langhammer, P.F., Bakarr, M.I., Bennun, L.A., Brooks, T.M., Clay, R.P., Darwall, W., De Silva, N., Edgar, G.J., Eken, G., Fishpool, L.D.C.,3 Fonseca, G.A.B. da, Foster, M.N., Knox, D.H., Matiku, P., Radford, E.A., Rodrigues, A.S.L., Salaman, P., Sechrest, W., & Tordoff, A.W. (2007). *Identification and Gap Analysis of Key Biodiversity Areas: Targets for Comprehensive Protected Area Systems*. Gland, Switzerland: IUCN.

Larsen, F.W., Turner, W.R. & Brooks, T.M., 2012. Conserving critical sites for biodiversity provides disproportionate benefits to people. *PLoS ONE*, 7(5).

Lavis, J.N., Robertson, D., Woodside, J.M., McLeod, C.B. & Abelson, J., 2003a. How can research organizations more effectively transfer research knowledge to decision makers? *Milbank quarterly*, *81*(2), pp.221-248.

Lavis, J., Ross, S., McLeod, C. & Gildiner, A., 2003b. Measuring the impact of health research. *Journal of Health Services Research & Policy*, *8*(3), pp.165-170.

Lawrence, A., 2006. "No Personal Motive?" Volunteers, Biodiversity, and the False Dichotomies of Participation. *Ethics, Place & Environment*, 9(3), pp.279–298.

Leader Williams, N., Adams, W.M. & Smith, R.J., 2010. Deciding what to save: trade offs in conservation. In *Trade Offs in Conservation: Deciding What to Save*. John Wiley & Sons, p. 1.

Lélé, S. & Norgaard, R.B., 2005. Practicing interdisciplinarity. *BioScience*, *55*(11), pp.967-975.

Lewin, K., 1946. Action Research and Minority Problems.pdf. *J Soc*, 4(2), pp.34–46.

Likert, R., 1932. A technique for the measurement of attitudes. *Archives of Psychology*, 22(140), pp.1–55.

Linstone, H.A. & Turoff, M., 2002. The Delphi Method. *Techniques and applications*, *53*.

Lipscomb, M., 2011. Critical realism and realist pragmatism in mixed methods: Problematics of event identity and abductive inference (evolving paradigms in mixed methods research). In *American Educational Research Association Annual Meet*.

Lövbrand, E., 2011. Co-producing European climate science and policy: a cautionary note on the making of useful knowledge. *Science and Public Policy*, 38(3)(June 2009), pp.225–236.

Lubchenco, J., 1998. Entering the Century of the Environment: A New Social Contract for Science. *Science*, 279(5350), pp.491–497.

Mace, G.M., 2014. Whose conservation? *Science*, 345(6204), pp.1558–1560.

Mace, G.M., 2000. It's time to work together and stop duplicating conservation efforts... *Nature*, 405(6785), p.393.

MacKinnon, D., Lemieux, C.J., Beazley, K., Woodley, S., Helie, R., Perron, J., Elliott, J., Haas, C., Langlois, J., Lazaruk, H. & Beechey, T., 2015. Canada and Aichi Biodiversity Target 11: understanding 'other effective area-based conservation measures' in the context of the broader target. *Biodiversity and Conservation*, *24*(14), pp.3559-3581.

Marcot, B.G., 2007. Biodiversity and the lexicon zoo. *Forest Ecology and Management*, 246(1 SPEC. ISS.), pp.4–13.

Margules, C.R. & Pressey, R.L., 2000. Systematic conservation planning. *Nature*, *405*(6783), pp.243-253.

Martin, B.R., Irvine, J. & Turner, R.K., 1984. The writing on the wall for {British} science. *New Scientist*, 104(1429), pp.25–29.

Marvier, M., 2014. New conservation is true conservation. *Conservation Biology*, 28(1), pp.1–3.

Mascia, M.B., Brosius, J.P., Dobson, T.A., Forbes, B.C., Horowitz, L., McKean, M.A. & Turner, N.J., 2003. Conservation and the social sciences. *Conservation biology*, *17*(3), pp.649-650.

Masters, J., 1995. The history of action research. *Action Research Electronic Reader*, 22, p.8.

Matsuda, B.M., 1997. Conservation Biology, Values, and Advocacy. 11(6), pp.1449–1450.

Melovski, L., Velevski, M., Matevski, V., Avukatov, V. & Sarov, A., 2012. Using important plant areas and important bird areas to identify Key Biodiversity Areas in the Republic of Macedonia. *Journal of Threatened Taxa*, *4*(8), pp.2766-2778.

Mitchell, R.B., 2006. *Global environmental assessments: Information and influence*, MIT Press.

Mitchell, R.B., Agle, B.R. & Wood, D.J., 1997. Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of Management Review*, 22(4), pp.853–886.

Mitton, C., Adair, C.E., McKenzie, E., Patten, S.B. & Perry, B.W., 2007. Knowledge transfer and exchange: review and synthesis of the literature. *Milbank Quarterly*, *85*(4), pp.729-768.

Montana, J., 2017. Accommodating consensus and diversity in environmental knowledge production: Achieving closure through typologies in IPBES. *Environmental Science & Policy*, *68*, pp.20-27.

Murphy, D.D., 1990. Conservation Biology and Scientific Method. *Conserv. Biol.*, 4(2), pp.203–204.

Myers, N., 1979. *The sinking ark. A new look at the problem of disappearing species*, Pergamon Press.

Naess, A., 2005. The Selected Works of Arne Naess: Deep Ecology of Wisdom, Vol. 10, H. Glasser and A. Drengson eds.

Natori Y., Kohri, M., Hayama, S., & De Silva, N., 2012. Key Biodiversity Areas identification in Japan Hotspot. *Journal of Threatened Taxa*, 4(August), pp.2797–2805.

Neilson, S., 2001. Knowledge Utilization and Public Policy Processes: A Literature Review. *Knowledge utilization and public policy process:* p.53.

Norse, E.A. & Mcmanus, R., 1980. Ecology and living resources-biological diversity. *The eleventh annual report of the council on environmental quality*, pp.31–80.

Norton, B.G., 1988. What is a Conservation Biologist? *Conservation Biology*, 2(3), pp.237–238.

Noss, R., 2007. Values are a good thing in conservation biology. *Conservation Biology*, 21(1), pp.18–20.

Nowotny, H., Scott, P. & Gibbons, M., 2003. Introduction: "Mode 2" revisited: The new production of knowledge. *Minerva*, 41(3), pp.179–194.

Odenbaugh, J., 2003. Values, advocacy and conservation biology. *Environmental Values*, *12*(1), pp.55-69.

Oja, S.N. & Smulyan, L., 1989. Collaborative action research: A development process. *London: Falmer*.

Osiek, E.R. & Morzer Bruyns, M.F., 1981. *Important Bird Areas in the European Community*, International Council for Bird Preservation, Cambridge, UK.

Pain, R., 2004. Social geography: participatory research. *Progress in Human Geography*, 28(5), pp.652–663.

Palmer, M. & Smart, J., 2001. Guidelines to the selection of Important Plant Areas in Europe. *Planta Europa*.

Pascual, U., Muradian, R., Brander, L., Gómez-Baggethun, E., Martín-López, B., Verma, M., Armsworth, P., Christie, M., Cornelissen, H., Eppink, F. & Farley, J., 2010. The economics of valuing ecosystem services and biodiversity. *TEEB–Ecological and Economic Foundation*.

Phillipson, J. & Liddon, A., 2007. Common knowledge? An exploration of knowledge transfer. *Rural Economy and Land Use Programme Briefing Series*, (6).

Phillipson, J., Lowe, P., Proctor, A. & Ruto, E., 2012. Stakeholder engagement and knowledge exchange in environmental research. *Journal of Environmental Management*, *95*(1), pp.56-65.

Pratt, G., 2000. Participatory action research. *Dictionary of human geography*, p.574.

Pretty, J., 1995. Participatory Learning for Sustainable Agriculture. *World Development*, 23(8), pp.1247–1263.

Pruitt, B. & Waddell, S., 2005. Dialogic approaches to global challenges: moving from "dialogue fatigue" to dialogic change processes. *Generative Dialogue …*, (August), p.55.

Ramsar Convention Secretariat, 2016. *An Introduction to the Convention on Wetlands (previously The Ramsar Convention Manual).*

Raymond, C.M., Fazey, I., Reed, M.S., Stringer, L.C., Robinson, G.M. & Evely, A.C., 2010. Integrating local and scientific knowledge for environmental management. *Journal of environmental management*, *91*(8), pp.1766-1777.

R Core Team (2015). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL http://www.R-project.org/.

Reason, P. & Rowan, J., 1981. *Human inquiry: A sourcebook of new paradigm research*, J. Wiley Chichester, UK.

Redford, K.H., Coppolillo, P., Sanderson, E.W., Da Fonseca, G.A., Dinerstein, E., Groves, C., Mace, G., Maginnis, S., Mittermeier, R.A., Noss, R. & Olson, D., 2003. Mapping the conservation landscape. *Conservation biology*, *17*(1), pp.116-131.

Redford, K. H., & A. Taber. 2000. Writing the wrongs: developing a safe-fail culture in conservation. *Conservation Biology,* 14**:**1567-1568.

Redford, K.H. & Richter, B.D., 1997. Conservation of Biodiversity in a World of Use. *Conservation Biology*, 13(6), pp.1246–1256.

Reed, M.S., 2008. Stakeholder participation for environmental management: A literature review. *Biological Conservation*, 141(10), pp.2417–2431.

Reed, M.S. & Curzon, R., 2015. Stakeholder mapping for the governance of biosecurity: a literature review. *Journal of Integrative Environmental Sciences*, 12(February 2015), pp.15–38.

Reed, M.S., Fazey, I., Stringer, L.C., Raymond, C.M., Akhtar-Schuster, M., Begni, G., Bigas, H., Brehm, S., Briggs, J., Bryce, R. & Buckmaster, S., 2013. Knowledge management for land degradation monitoring and assessment: an analysis of contemporary thinking. *Land Degradation & Development*, *24*(4), pp.307-322.

Reed, M.S., Graves, A., Dandy, N., Posthumus, H., Hubacek, K., Morris, J., Prell, C., Quinn, C.H. & Stringer, L.C., 2009. Who's in and why? A typology of stakeholder analysis methods for natural resource management. *Journal of environmental management*, *90*(5), pp.1933-1949.

Reed, M.S., Stringer, L.C., Fazey, I., Evely, A.C. & Kruijsen, J.H.J., 2014. Five principles for the practice of knowledge exchange in environmental management. *Journal of environmental management*, *146*, pp.337-345.

Rich, R.F. 1979. The Pursuit of Knowledge. *Knowledge: Creation, Diffusion, Utilization* 1:6.

Richards, C., Blackstock, K.L. & Carter, C.E., 2004. Practical Approaches to Participation. *SERG Policy Brief No. 1.*

Ricketts, T.H., Dinerstein, E., Boucher, T., Brooks, T.M., Butchart, S.H., Hoffmann, M., Lamoreux, J.F., Morrison, J., Parr, M., Pilgrim, J.D. & Rodrigues, A.S., 2005. Pinpointing and preventing imminent extinctions. *Proceedings of the National Academy of Sciences of the United States of America*, *102*(51), pp.18497-18501.

Robinson, J., 2008. Being undisciplined: Transgressions and intersections in academia and beyond. *Futures*, 40(1), pp.70–86.

Robinson, J., 2011. Ethical pluralism, pragmatism, and sustainability in conservation practice. *Biological Conservation*, 144(3), pp.958–965.

Rodrigues, A.S., Pilgrim, J.D., Lamoreux, J.F., Hoffmann, M. & Brooks, T.M., 2006. The value of the IUCN Red List for conservation. *Trends in ecology & evolution*, *21*(2), pp.71-76.

Roebuck, P. & Phifer, P., 1999. Society for Conservation Biology. The Persistence of Positivism in Conservation Biology. *Conservation Biology*, 13(2), pp.444–446.

Rolston, H., 1985. Duties to endangered species. *Bioscience*, 35(11), pp.718–726.

Rounsevell, M.D. & Metzger, M.J., 2010. Developing qualitative scenario storylines for environmental change assessment. *Wiley Interdisciplinary Reviews: Climate Change*, *1*(4), pp.606-619.

Rowe, G. & Frewer, L.J., 2005. A typology of public engagement mechanisms. *Science, technology & human values*, *30*(2), pp.251-290.

Rowe, G. & Frewer, L.J., 2004. Evaluating public-participation exercises: A research agenda. *Science Technology & Human Values*, 29(4), pp.512–557.

Rowe, G. & Frewer, L.J., 2000. Public participation methods: A framework for evaluation. *Science Technology & Human Values*, 25(1), pp.3–29.

Rudd, M.A., 2011. How Research-Prioritization Exercises Affect Conservation Policy. *Conservation Biology*, 25(5), pp.860–866.

Sandbrook, C., Adams, W.M., Büscher, B. & Vira, B., 2013. Social research and biodiversity conservation. *Conservation Biology*, *27*(6), pp.1487-1490.

Sanderson, E.W., Redford, K.H., Vedder, A., Coppolillo, P.B. & Ward, S.E., 2002. A conceptual model for conservation planning based on landscape species requirements. *Landscape and urban planning*, *58*(1), pp.41-56.

Sarewitz, D. & Pielke, R.A., 2007. The neglected heart of science policy: reconciling supply of and demand for science. *Environmental Science and Policy*, 10(1), pp.5–16.

Schuh, K.L. & Barab, S.A., 2008. 7 Philosophical Perspectives. In *Handbook of Research on Educational Communications and Technology*. pp. 67–82.

SDG, 2016. *Report of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators.*

Shove, E. & Rip, A., 2000. Users and unicorns: A discussion of mythical beasts in interactive science. *Science and Public Policy*, 27(3), pp.175–182.

Sieber, S.D., 1973. The Integration of Fieldwork and Survey MethodsThe Integration of Fieldwork and Survey Methods. *American Journal of Sociology*, 78(6), pp.1335–1359.

Slaughter, S. & Leslie, L., 1997. Academic capitalism: Politics, policies, and the entrepreneurial university. *Baltimore: Johns Hopkins University*, 2, pp.2004–2013.

Sodhi, N.S. & Ehrlich, P.R., 2010. *Conservation Biology for All*. Oxford University Press.

Song, S.J. & M'Gonigle, R.M.M., 2001. Science, Power, and System Dynamics: the Political Economy of Conservation Biology. *Society for Conservation Biology*, 15(4), pp.980–989.

Soulé, M.E., 1985. What is conservation biology? *BioScience*, 35(11), pp.727–734.

Soulé, M.E., 2013. The "new conservation." *Conservation Biology*, 27(5), pp.895–897.

Stirling, A., 2006. Analysis, participation and power: Justification and closure in participatory multi-criteria analysis. *Land Use Policy*, 23(1), pp.95–107.

Stirling, A., 2008. Opening up or closing down? Analysis, participation and power in the social appraisal of technology. *Science, Technology & Human Values*, 33(2), pp.262–294.

Takacs, D., 1996. The idea of biodiversity: philosophies of paradise.

TBC, 2016a. The Biodiversity Consultancy, Briefing Note 1, *IUCN decisions tighten 'no go' for protected areas and other important sites for biodiversity.*

TBC, 2016b. The Biodiversity Consultancy, Briefing Note 2, IUCN's World Conservation Congress 2016: what the decisions mean for business.

Thompson, G.N., Estabrooks, C.A. & Degner, L.F., 2006. Clarifying the concepts in knowledge transfer: A literature review. *Journal of Advanced Nursing*, 53(6), pp.691–701.

Thomson, A.M., Perry, J.L. & Miller, T.K., 2008. Linking collaboration processes and outcomes. *Big ideas in collaborative public management*, pp.97–120.

Tippett, J., Handley, J.F. & Ravetz, J., 2007. Meeting the challenges of sustainable development-A conceptual appraisal of a new methodology for participatory ecological planning. *Progress in Planning*, 67(1), pp.9–98.

TNC (2001) *Biological and Conservation Database, with Online Help.* Arlington, Virginia, USA: The Nature Conservancy.

Tordoff, A.W., Baltzer, M.C., Fellowes, J.R., Pilgrim, J.D. & Langhammer, P.F., 2012. Key biodiversity areas in the Indo-Burma Hotspot: process, progress and future directions. *Journal of Threatened Taxa*, *4*(8), pp.2779-2787.

Tress, B., Tress, G. & Fry, G., 2005. Defining concepts and the process of knowledge production in integrative research. *From landscape research to landscape planning: Aspects of integration, education and application*, (13), pp.13–26.

Turner, M.G., 2005. What Is the State of the Science? *Landscape Ecology*, 36(2005), pp.319–344.

Turner, R.K., Paavola, J., Cooper, P., Farber, S., Jessamy, V. & Georgiou, S., 2003. Valuing nature: lessons learned and future research directions. *Ecological economics*, *46*(3), pp.493-510.

Turnhout, E., Hisschemöller, M. & Eijsackers, H., 2007. Ecological indicators: Between the two fires of science and policy. *Ecological Indicators*, 7(2), pp.215–228.

Udvardy, M.D.F., 1975. A classification of the biogeographical provinces of the world. *IUCN Occasional Paper, International Union for Conservation of Nature and Natural Resources*, (8), p.48-.

UNECE, 1998. Aarhus Convention. Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters. United Nations Economic Commission for Europe.

UNESCO, 1972. Convention Concerning the Protection of the World Cultural and Natural Heritage. *General conference seventeenth session*, 1(November), pp.135–145.

Universalia, 2015. External Evaluation of Aspects of IUCN's Governance. Final Report. November, 2015.

van den Hove, S., 2007. A rationale for science-policy interfaces. *Futures*, 39(7), pp.807–826.

van Swaay, C.A.M. & Warren, M.S., 2006. Prime Butterfly Areas of Europe: An initial selection of priority sites for conservation. *Journal of Insect Conservation*, 10(1), pp.5–11.

Vogl, S., 2013. Telephone Versus Face-to-Face Interviews: Mode Effect on Semistructured Interviews with Children. *Sociological Methodology*, 43(1), pp.133–177.

WCPA, 2009. *World Commission on Protected Areas newsletter.*

Weaver, P. & Johnson, D., 2012. Think big for marine conservation. *Nature*, 483, p.399.

Weiss, C.H., 1979. The many meanings of research utilization. *Public administration review*, *39*(5), pp.426-431.

Whyte, W.F.E., 1991. *Participatory action research.* Sage Publications, Inc.

Wilson, E.O., 1999. *Consilience: The unity of knowledge* (Vol. 31). Vintage.

Wilson, E.O., 1988. The current state of biological diversity. *Biodiversity*, *521*(1), pp.3-18.

WPC, 2014. World Parks Congress website – accessed October 17th 2014.

Yahi, N., Vela, E., Benhouhou, S., De Belair, G. & Gharzouli, R., 2012. Identifying important plants areas (key biodiversity areas for plants) in northern Algeria. *Journal of threatened taxa*, *4*(8), pp.2753-2765.

Ziman, J., 1996. Is science losing its objectivity? *Nature*, 382(6594), pp.751–754.

Appendices

Appendix 2-A: List of global stakeholder engagement workshops, events, and processes

Some end-users participated in the technical workshops and regional events; however, this was often in the capacity of 'subject expert' rather than simply as end-users.

Table 2-A-1. Global stakeholder engagement workshops, events, and processes.

Date	Event	Location	Number of Participants	Stakeholder Groups Involved	Type/level of Consultation	Details, Outputs, and/or Outcomes
July 2009	ICCB	Beijing, China	Unknown	- Subject Experts	Regional Event	Symposium on mainstreaming KBAs
May 2010	SBSTTA 14	Nairobi, Kenya	20	- End-users	Regional Event	-
Dec 2011	ICCB	Auckland, New Zealand	36	- IUCN Task Force - Subject Experts - End-users	Regional Event	Minutes
Feb 2012	IUCN SSC Chairs Meeting	Abu Dhabi, United Arab Emirates	120	- SSC SG chairs	Regional Event	-
Feb 2012	IUCN SSC Invertebrates Sub-Committee	Abu Dhabi, United Arab Emirates	12	- Taxonomic experts	Regional Event	-
Feb 2012	IUCN SSC Plants Sub-Committee	Abu Dhabi, United Arab Emirates	15	- Taxonomic experts	Regional Event	-
June 2012	Framing Workshop	Cambridge, United Kingdom	66	- IUCN Task Force - Subject Experts - End-users	Technical workshop	Framing Workshop Report
April 2012	Biodiversity Without Boundaries Conference	Oregon, United States of America	20	- Subject Experts - End-users	Regional Event	Minutes + Table 1 - State and provincial processes to identify sites of biodiversity conservation significance

Date	Event	Location	Number of Participants	Stakeholder Groups Involved	Type/level of Consultation	Details, Outputs, and/or Outcomes
Aug 2012	Biodiversity Asia. SCB Regional Conference	Bangalore, India	50	- Subject Experts - End-users	Regional Event	Minutes
Sept 2012	ECCB	Glasgow, Scotland	30	- Subject Experts - End-users	Regional Event	Minutes
Sept 2012	IUCN WCC	Jeju, South Korea	30	- IUCN Task Force - Subject Experts - End-users	Regional Event	Minutes
Oct 2012	CBD COP11	Hyderabad, India	20	- End-users	Regional Event	-
Nov 2012	ZSL Symposium	London, United Kingdom	50	- Subject Experts - End-users	Regional Event	Minutes
Dec 2012	BIOPAMA Regional Workshop: Eastern and Southern Africa	Johannesburg South Africa	53	- Subject Experts	Regional Event	Minutes
Jan 2013	BIOPAMA Regional Workshop: Caribbean	Bridgetown, Barbados	20	- Subject Experts	Regional Event	Minutes
Feb 2013	BIOPAMA Regional Workshop: Pacific	Suva, Fiji	56	- Subject Experts	Regional Event	Minutes
Feb 2013	BIOPAMA Regional Workshop: West and Central Africa	Dakar, Senegal	15	- Subject Experts	Regional Event	Minutes
Feb 2013	IAIA Symposium on Biodiversity and Ecosystem Services	Washington DC, United States of America	20	End-users	Regional Event	-
March 2013	Criteria and Delineation Workshop	Virginia, United States of America	40	- IUCN Task Force - Subject Experts - End-users	Technical Workshop	Criteria and Delineation Workshop Report
April 2013	Biodiversity Without Boundaries Conference	Baltimore, United States of America	35	- Subject Experts - End-users	Regional Event	Minutes
April 2013	ConGRESS	Gregynog, United Kingdom	35	- Subject Experts	Regional Event	Minutes

Date	Event	Location	Number of Participants	Stakeholder Groups Involved	Type/level of Consultation	Details, Outputs, and/or Outcomes
July 2013	ICCB	Baltimore, United States of America	25	- IUCN Task Force - Subject Experts - End-users	Regional Event	-
Aug 2013	Capacity building session on KBAs for IUCN staff	Gland, Switzerland	16	- End-users	Capacity building	-
Oct 2013	SBSTTA 17	Montreal, Canada	35	- End-users	Regional Event	Info document
Oct 2013	IMPAC 3	Marseille, France	20	- Technical Experts	Regional Event	Minutes
Nov 2013	Governance Workshop	Brasilia, Brazil	34	- IUCN Task Force - Subject Experts - End-users	Technical Workshop	Governance Workshop Report
Dec 2013	Thresholds Workshop	Rome, Italy	30	- IUCN Task Force - Subject Experts - End-users	Technical Workshop	Thresholds Workshop Report
Jan 2014	Governance Follow-up Meeting	Cambridge, United Kingdom	9	- IUCN Task Force	Technical Workshop	Addendum to Governance Workshop Report
April 2014	23rd Philippine Biodiversity Symposium	Cebu City, Philippines	30	- Subject Experts - End-users	Regional Event	-
Sept 2014 – Nov 2014	KBA Draft Methodology Public Online Consultation: Round 1	Global, online	160	All/open	Online consultation	1200 comments + responses
Sept 2014 – Nov 2014	KBA End-user Questionnaire	Global, online	75	All/open	Online questionnaire	75 responses
Nov 2014	IUCN WPC	Sydney, Australia	120	All/open	Regional Event	Flipcharts from end-user event
Feb 2015	KBA Criteria B Meeting	Cambridge, United Kingdom	18	- IUCN Task Force - Subject Experts	Technical Workshop	Criteria B workshop report
Feb 2015	KBA Editorial Team Meeting	Cambridge, United Kingdom	8	- IUCN Task Force	-	-

Date	Event	Location	Number of Participants	Stakeholder Groups Involved	Type/level of Consultation	Details, Outputs, and/or Outcomes
April 2015	KBA Partnership Meeting	Washington, D.C. United States of America	31	- IUCN Task Force - Subject Experts - End-users	Technical Workshop	KBA Partnership Scoping Meeting Report
April 2015	Biodiversity without Boundaries	Traverse City, United States of America	20	All/open	Regional Event	-
Sept 2015 – Oct 2015	KBA Draft Methodology Public Online Consultation: Round 2	Global, online	TBC	All/open	Online consultation	TBC
Sept 2015 – Oct 2015	KBA End-user Questionnaire	Global, online	98	All/open	Online questionnaire	98 responses
Sept 2016	World Conservation Congress	Honolulu, United States of America	-	- IUCN Task Force - Subject Experts - End-users		

Appendix 2-B: Terms used in the definition of KBAs

Although many of these terms may seem to speak for themselves, these definitions were negotiated during the Technical Workshops. These are defined in IUCN (2016: 9-10).

Key Biodiversity Areas
"KBAs are sites contributing significantly to the global persistence of biodiversity." (IUCN, 2016a: 9)

Biodiversity
"Biodiversity is 'the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems', according to the Convention on Biological Diversity (CBD) (UN 1992)." (IUCN, 2016a: 9)

Contributing/Contribution
"The contribution of a site to the global persistence of biodiversity depends on the global distribution and the abundance of the biodiversity elements for which the site is important. Sites holding biodiversity elements that are globally restricted, or at risk of disappearing, make high contributions to the persistence of those elements. The global persistence of a biodiversity element occurring at any given KBA, unless it is entirely confined to the site, depends not only on the fate of the site itself but also on that of other sites and of the land-/seascapes where it occurs." (IUCN, 2016a: 9)

Global
"Global implies that the contributions of a site to the persistence of a given biodiversity element are measured in relation to its worldwide population size or extent." (IUCN, 2016a: 9)

Persistence
"Persistence of a biodiversity element means that its loss (e.g. species extinction, ecosystem collapse) or decline (e.g. of numbers of mature individuals of a species, ecosystem extent and condition) is avoided, both now and into the foreseeable future." (IUCN, 2016a: 10)

Significantly/Significant
"Significant means that an outstanding proportion of a biodiversity element (e.g. species population size or ecosystem extent) occurs at the site, as defined by a quantitative threshold." (IUCN, 2016a: 10)

Site
"A geographical area on land and/or in water with defined ecological, physical, administrative or management boundaries that is actually or potentially manageable as a single unit (e.g. a protected area or other managed conservation unit). For this reason, large-scale biogeographic regions such as ecoregions, Endemic Bird Areas and Biodiversity Hotspots, and land-/seascapes containing multiple management units, are not considered to be sites. In the context of KBAs, "site" and "area" are used interchangeably." (IUCN, 2016a: 10)

Appendix 2-C – KBA Standard criteria and thresholds

IUCN (2016: 36-37)

A. Threatened Biodiversity	*Biodiversity element at site*	*% global pop. size/extent*	*RU*[1]
A1. Threatened species	(a) CR or EN species	≥0.5%	≥5
	(b) VU species	≥1%	≥10
	(c) CR or EN species Threatened only due to population size reduction in the past or present	≥0.1%	≥5
	(d) VU species Threatened only due to population size reduction in the past or present	≥0.2%	≥10
	(e) CR or EN species	Entire global population size	
A2: Threatened ecosystem types	(a) CR or EN ecosystem type	≥5%	
	(b) VU ecosystem type	≥10%	

B. Geographically restricted biodiversity	*Biodiversity element at site*	*% global pop. size/extent*	*RU*
B1: Individually geographically restricted species	Any species	≥10%	≥10
B2: Co-occurring geographically restricted species	Restricted-range species: ≥2 species OR 0.02% of total number of species in taxonomic group, whichever is larger	≥1%	
B3: Geographically restricted assemblages	(a) ≥5 ecoregion-restricted species[2] OR 10% of the species restricted to the ecoregion, whichever is larger	≥0.5%	
	(b) ≥5 bioregion-restricted species[2] OR 30% of the bioregion-restricted species known from the country, whichever is larger		
	(c) Part of the globally most important 5% of occupied habitat of each of ≥5 species within a taxonomic group		
B4: Geographically restricted ecosystem types	Any ecosystem type	≥20%	

C. Ecological integrity	*Biodiversity element at site*	
	Wholly intact ecological communities	≤2 sites per ecoregion

D. Biological processes	*Biodiversity element at site*	*% global pop. size*
D1: Demographic aggregations	(a) Species aggregation during one or more key stages of its life cycle	≥1%
	(b) Among the largest 10 aggregations known for the species	
D2: Ecological refugia	Species aggregations during periods of past, current or future environmental stress	≥10%
D3: Recruitment sources	Propagules, larvae or juveniles maintaining high proportion of global population size	≥10%[3]

E: Irreplaceability through quantitative analysis	*Biodiversity element at site*	*Irrepl. score*	*RU*
	Site has high irreplaceability measured by quantitative spatial analysis	≥0.90 on 0–1 scale	≥10 (or ≥5 for EN/ CR sp)

[1]RU=reproductive units; [2]wtihin a taxonomic group; [3]refers to global population size rather than immature individuals produced.

Appendix 4-A: Volunteer Contract

IUCN Species Programme
219c Huntingdon Road
Cambridge CB3ODL
United Kingdom

Tel. +44 (0) 1223 277 966
Fax +44 (0) 1223 277 845
www.iucn.org

Private and Confidential

Jessica Lynch Boucher
40 Braid Crescent
Edinburgh Eh10 6au
Scotland

25 March 2013

Dear Jessica,

Volunteer Work: Communicating the work of the WCPA-SSC Joint Taskforce

I would like to thank you for volunteering to support the IUCN Global Species Programme with the use of your time and I am pleased to confirm arrangements for you to join our programme at 219c Huntingdon Road, Cambridge as a volunteer worker within the Conservation Planning Unit, Global Species Programme. Your voluntary work will include:

Your voluntary work will begin on 20th of March 2013 and end on the 31st of May 2013 and will consist of:

- Further developing the Taskforce website
- Creating a database of the participants to the various consultations
- Contributing to the newsletter
- Writing creative news/case studies and gathering photos for the website
- Develop a concept for the e-consultation (eForum, wiki, or other means)

While you are working for IUCN in this capacity, you will be covered by IUCN's own indemnity arrangements in respect of all liabilities that may result from your appointment as a volunteer,. In addition, Annabelle Cuttelod will be responsible for overseeing all matters relating to your work and will provide you with the information and support to carry it out. You are also reminded that all documentary and other material (including copyright applying thereto) relating to your voluntary work is the property of IUCN and confidential.

Please sign and return the attached copy to signify your agreement to the terms outlined in this letter. Once again, I would like to thank you for taking the time to support IUCN on a voluntary basis.

Yours sincerely

Dr. Richard Jenkins
Manager, IUCN UK
Global Species Program

Appendix 4-B: Collaboration Memo

12 July 2014

Memo: Collaboration between Jessica Boucher (University of Edinburgh) and IUCN WCPA/SSC Joint Task Force on Biodiversity and Protected Areas

We are delighted to establish collaboration between the IUCN WCPA/SSC Joint Task Force on Biodiversity and Protected Areas and Jessica Boucher's work as a PhD student at the University of Edinburgh.

One of the objectives of the Task Force is to consolidate a global standard for the identification of sites contributing significantly to the global persistence of biodiversity, or "key biodiversity areas". Part of this effort has involved a interview-based consultation of ~26 end-user constituencies, led by N. Dudley, to better understand how they plan to use information on key biodiversity areas, and what needs, hopes and fears they have from the process.

In this light, the Task Force enthusiastically welcomes J. Boucher's proposed research to:

1. Undertake a systematic literature review of existing systems to identify important sites for biodiversity.
2. Work with N. Dudley to undertake the end-user interviews, and analyse and synthesise the results of these.
3. Organise an open, web-based end-user consultation, in association with the public review of the draft key biodiversity area methodology, and analyse its results relative to those of the in-person consultations.
4. Organise further open, web-based end-user consultations, subsequent to the finalisation of the key biodiversity area methodology, and analyse their results to assess any changes in end-user perspectives over time.

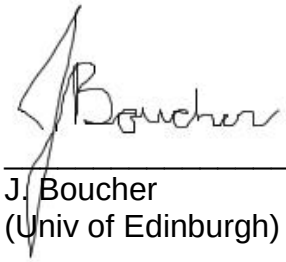
The Task Force appreciates that T. Brooks, IUCN Head Science & Knowledge, has agreed to serve as a PhD committee member for J. Boucher. Conversely, J. Boucher has accepted the offer from the Task Force to serve as a task force member.

Regarding roles, rights, and responsibilities:

- The data collected through #2 will be published as an edited volume, with the individual interviewees in the role of authors of their respective chapters if they so wish. J. Boucher will be invited to join N. Dudley and colleagues as a co-author of the summary chapter, and as an editor of the overall volume.
- You will have full access to analyse and synthesise these data for project #2 above, and lead publication of a scientific paper discussing this.

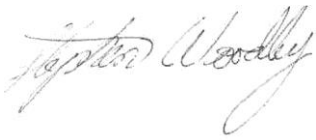
- The data collected through projects #3 and #4 will lie in your intellectual property, to analyse and publish, in collaboration with relevant Task Force members as deemed mutually appropriate, and to archive in an Annex to your PhD (with interviewee names redacted, if so requested).

We confirm that these terms of collaboration are mutually agreeable (signed and dated):



J. Boucher
(Univ of Edinburgh)

P. Langhammer
(Co-Chair, IUCN WCPA/SSC Joint Taskforce)



S. Woodley
(Co-Chair, IUCN WCPA/SSC Joint Taskforce)

Appendix 4-C UN Regions

I categorised end-users by UN Region based upon their nationality.

United Nations Regional Groups of Member States: African Group, Asia-Pacific Group, Eastern Europe Group, Latin American and Caribbean Group, Western Europe and Others Group.

African Group

Algeria
Angola
Benin
Botswana
Burkina Faso
Burundi
Cabo Verde
Cameroon
Central African Republic
Chad
Comoros
Congo
Côte d'Ivoire
Democratic Republic of the Congo
Djibouti
Egypt
Equatorial Guinea
Eritrea
Ethiopia
Gabon
Gambia
Ghana
Guinea
Guinea-Bissau
Kenya
Lesotho
Liberia
Libya
Madagascar
Malawi
Mali
Mauritania
Mauritius
Morocco
Mozambique
Namibia
Niger
Nigeria
Rwanda
São Tomé and Príncipe
Senegal
Seychelles
Sierra Leone
Somalia
South Africa
South Sudan
Sudan
Swaziland
Togo
Tunisia
Uganda
United Republic of Tanzania
Zambia
Zimbabwe

Asia-Pacific Group

Afghanistan
Bahrain
Bangladesh
Bhutan
Brunei Darussalam
Cambodia
China
Cyprus
Democratic People's Republic of Korea
Fiji
India
Indonesia
Iran (Islamic Republic of)
Iraq
Japan
Jordan
Kazakhsta
Kiribati
Kuwait
Kyrgyzstan
Lao People's Republic
Lebanon
Malaysia
Maldives
Marshall Islands
Micronesia (Federated States of)
Mongolia

Myanmar
Nauru
Nepal
Oman
Pakistan
Palau
Papua New Guinea
Philippines
Qatar
Republic of Korea
Samoa
Saudi Arabia
Singapore
Solomon Islands
Sri Lanka
Syrian Arab Republic
Tajikistan
Thailand
Timor-Leste
Tonga
Turkey*
Turkmenistan
Tuvalu
United Arab Emirates
Uzbekistan
Vanuatu
Vietnam
Yemen

Eastern European Group

Albania
Armenia
Azerbaijan
Belarus
Bosnia and Herzegovina
Bulgaria
Croatia
Czech Republic
Estonia
Georgia
Hungary
Latvia
Lithuania
Montenegro
Poland
Republic of Moldova
Romania
Russian Federation
Serbia
Slovakia
Slovenia
The former Yugoslav Republic of Macedonia
Ukraine

Latin American and Caribbean Group (GRULAC)

Antigua and Barbuda
Argentina
Bahamas
Barbados
Belize
Bolivia (Plurinational State of)
Brazil
Chile
Colombia
Costa Rica
Cuba
Dominica
Dominican Republic
Ecuador
El Salvador
Grenada
Guatemala
Guyana
Haiti
Honduras
Jamaica
Mexico
Nicaragua
Panama
Paraguay
Peru
Saint Kitts and Nevis
Saint Lucia
Saint Vincent and the Grenadines
Suriname
Trinidad and Tobago
Uruguay
Venezuela (Bolivarian Republic of)

Western Europe and Others Group (WEOG)

Andorra	Iceland	Norway
Australia	Ireland	Portugal
Austria	Israel*	San Marino
Belgium	Italy	Spain
Canada	Liechtenstein	Sweden
Denmark	Luxembourg	Switzerland
Finland	Malta	Turkey*
France	Monaco	United Kingdom
Germany	Netherlands	United States of America
Greece	New Zealand	

***Special cases**

Israel
In May 2000 Israel became a WEOG full member, on a temporary basis (subject to renewal), in WEOG's headquarters in the US, thereby enabling it to put forward candidates for election to various UN General Assembly bodies. In 2004 Israel obtained a permanent renewal to its membership.

Kiribati
As of 2010, Kiribati (geographically in Oceania) is not a member of any regional group, despite other Oceania nations belonging to the Asian group. Despite its membership in the United Nations, Kiribati has never delegated a permanent representative to the UN.

Turkey
Turkey, participates fully in both WEOG and Asian Group, but for electoral purposes is considered a member of WEOG only.

United States of America
The United States of America is not a member of any regional group, but attends meetings of the Western Europe and Other States Group (WEOG) as an observer and is considered to be a member of that group for electoral purposes.

Appendix 4-D: End-user Questionnaire

(available in English, French and Spanish)

Key Biodiversity Areas – End-User Questionnaire

During the 2004 World Conservation Congress, IUCN Members requested that the IUCN "convene a worldwide consultative process to agree a methodology to enable countries to identify Key Biodiversity Areas" (WCC 3.013). Key Biodiversity Areas (KBAs) are sites contributing significantly to the global persistence of biodiversity. A great deal of collaborative work and research has been undertaken since that time, convened through the IUCN Species Survival Commission (SSC) and the World Commission on Protected Areas (WCPA) Joint Task Force on Biodiversity and Protected Areas.

The aim of the consultation process is to develop a globally agreed standard for the identification of KBAs, which draws and builds on existing approaches, while responding to end-users needs for a scientifically rigorous yet pragmatic methodology. End-users are considered to be those involved in decision-making processes linked to mechanisms to secure biodiversity or to avoid biodiversity loss.

The purpose of this end-user consultation is to seek opinions on how the information produced through the application of the KBA Standard can:

- be used to inform policy and practice;
- best suit end-user needs; and
- result in the best outcomes for biodiversity.

This questionnaire is being conducted in association with the IUCN SSC/WCPA Joint Task Force on Biodiversity and Protected Areas as part of research underway at the University of Edinburgh. Further information on data protection and ethics can be found at the end of the questionnaire.

Your time and input are greatly appreciated.

*** Required**

Sector *

Institution/Organisation *

Nationality *

Country of employment *

Interviews were conducted with 26 existing and potential KBA end-users throughout 2013 and 2014. Interviewees were selected from a wide range of sectors. The purpose of the interviews was to determine their needs, data requirements, concerns and recommendations in relation to the development of the KBA Standard. The interviews documented end-user perspectives and did not seek unanimity.

The questions below seek to solicit broader input from existing and potential end-users on the main themes that emerged from the interviews. In addition, the same five open-ended questions posed during the interviews are also included at the end of the questionnaire for optional additional input.

Please indicate your level of agreement/disagreement with each statement.

A standardized approach to identify KBAs is needed.

- ○ Strongly Agree
- ○ Agree
- ○ Neither Agree nor Disagree
- ○ Disagree
- ○ Strongly Disagree

The KBA Standard should build upon the existing approaches used to identify sites of particular importance for biodiversity (such as Important Bird and Biodiversity Areas, Important Plant Areas, Alliance for Zero Extinction Sites and others).

- ○ Strongly Agree
- ○ Agree
- ○ Neither Agree nor Disagree
- ○ Disagree
- ○ Strongly Disagree

KBA data should be used to inform the prioritisation of conservation action.

- ○ Strongly Agree
- ○ Agree
- ○ Neither Agree nor Disagree
- ○ Disagree
- ○ Strongly Disagree

KBAs themselves should be priorities for conservation action.

- ○ Strongly Agree
- ○ Agree
- ○ Neither Agree nor Disagree
- ○ Disagree
- ○ Strongly Disagree

One global standardised approach for identifying KBAs is preferable to multiple national level approaches that identify areas of particular importance for biodiversity.

- ○ Strongly Agree
- ○ Agree
- ○ Neither Agree nor Disagree
- ○ Disagree
- ○ Strongly Disagree

A focus on KBAs may undermine national processes and priorities.

- ○ Strongly Agree
- ○ Agree
- ○ Neither Agree nor Disagree
- ○ Disagree
- ○ Strongly Disagree

KBAs should be ranked according to relative importance for biodiversity.

- ○ Strongly Agree
- ○ Agree
- ○ Neither Agree nor Disagree
- ○ Disagree
- ○ Strongly Disagree

An emphasis on KBAs could hinder conservation efforts outside of KBAs.

- ○ Strongly Agree
- ○ Agree
- ○ Neither Agree nor Disagree
- ○ Disagree
- ○ Strongly Disagree

KBA data should be freely available for commercial use.

- ○ Strongly Agree
- ○ Agree
- ○ Neither Agree nor Disagree
- ○ Disagree
- ○ Strongly Disagree

A lack of biodiversity data in many regions could limit the utility of the KBA Standard.

- ○ Strongly Agree
- ○ Agree
- ○ Neither Agree nor Disagree
- ○ Disagree
- ○ Strongly Disagree

Development activities should not be permitted in KBAs.

- ○ Strongly Agree
- ○ Agree
- ○ Neither Agree nor Disagree
- ○ Disagree
- ○ Strongly Disagree

An initial KBA database, based on currently available data, should be developed quickly in order to be immediately useful.

- ○ Strongly Agree
- ○ Agree
- ○ Neither Agree nor Disagree
- ○ Disagree
- ○ Strongly Disagree

KBA documentation should include management options for the site.

- ○ Strongly Agree
- ○ Agree
- ○ Neither Agree nor Disagree
- ○ Disagree
- ○ Strongly Disagree

KBA documentation should include additional information when available (such as information on climate change impacts, ecosystem services and socio-economic data).

- ○ Strongly Agree
- ○ Agree
- ○ Neither Agree nor Disagree
- ○ Disagree
- ○ Strongly Disagree

Thoughtful engagement at the local level will be essential to the effective application of the KBA standard.

- ○ Strongly Agree
- ○ Agree
- ○ Neither Agree nor Disagree
- ○ Disagree
- ○ Strongly Disagree

Clear communication regarding the added value of the KBA standard is needed.

- ○ Strongly Agree
- ○ Agree
- ○ Neither Agree nor Disagree
- ○ Disagree
- ○ Strongly Disagree

The KBA Standard will encourage collaboration among constituencies involved in identifying sites of particular importance for biodiversity.

- ○ Strongly Agree
- ○ Agree
- ○ Neither Agree nor Disagree
- ○ Disagree
- ○ Strongly Disagree

Any additional comments or questions?

Open Ended End-User Interview Questions (optional)

What do you need from KBAs?

What tools and products do you require?

How do KBAs fit with your existing and emerging policies and procedures?

Do you have any concerns about the application of the KBA Standard? If so, what are they?

What are the main recommendations you have, based on your answers above, for the development of the KBA Standard?

Would you be willing to answer some follow up questions in relation to the KBA Standard?
If yes, please provide your name and email below.

- ○ Yes
- ○ No

Name:

Email:

Data Protection and Ethics

All information provided by respondents will be processed and stored electronically in an encrypted format in accordance with the UK Data Protection Act (1998) and the University of Edinburgh's Data Protection policy. This information will be used to inform the ongoing KBA consultation process and for academic research purposes. The data will not be shared. All efforts will be made to maintain confidentiality and anonymity.

Please note that by participating in this questionnaire you have indicated your acceptance of the data protection terms and conditions indicated above.

If you have any further questions or if you are interested in receiving a copy of the final publication(s) please let Jessica Boucher know (jessica.boucher@ed.ac.uk).

Further information regarding the IUCN SSC/WCPA Joint Task Force on Biodiversity and Protected Areas can be found at the following link:

http://www.iucn.org/about/work/programmes/gpap_home/gpap_biodiversity/gpap_wcpabiodiv/gpap_p abiodiv/key_biodiversity_areas/

Thank you for your time and input.

Appendix 4-E: End-User Questionnaire: organisation, sector, and UN region group

Table 4-E-1. End-User Questionnaire organisation, sector, and UN regional group.

#	**Institution/Organisation**	**Sector**	**UN Region Group**
1	Agharkar Research Institute	Academia	Asia-Pacific Group
2	American University of Madaba	Academia	African Group
3	Arul Anandar College	Academia	Asia-Pacific Group
4	Bahauddin Zakariya University, Multan	Academia	Asia-Pacific Group
5	Barasat College	Academia	Asia-Pacific Group
6	Carnegie Museum of Natural History	Academia	Western Europe and Others Group
7	Center for Biodiversity and Conservation, American Museum of Natural History	Academia	Western Europe and Others Group
8	Centro de Biologia Ambiental da Faculdade de Ciências da Universidade de Lisboa	Academia	Western Europe and Others Group
9	CNRS	Academia	Western Europe and Others Group
10	El Colegio de la Frontera Sur	Academia	Latin American and Caribbean Group
11	Emil Racovitza Institute of Speleology	Academia	Eastern Europe Group
12	Federico Villarreal National University	Academia	Latin American and Caribbean Group
13	Formerly with Kerala Forest Research Institute	Academia	Asia-Pacific Group
14	Institute of Science & Technology for Advanced Studies & Research (ISTAR)	Academia	Asia-Pacific Group
15	Institute of Zoology, Chinese Academy of Sciences	Academia	Asia-Pacific Group
16	Lab d'Ecologie Appliquee	Academia	African Group
17	London School of Economics	Academia	Western Europe and Others Group
18	MNHN	Academia	Western Europe and Others Group
19	MNHN	Academia	Western Europe and Others Group
20	Museo de Historia Natural-UNMSM	Academia	Latin American and Caribbean Group
21	Sapienza University	Academia	Western Europe and Others Group
22	SDSU	Academia	Western Europe and Others Group
23	Shanxi University	Academia	Asia-Pacific Group
24	Technical University of Berlin	Academia	Western Europe and Others Group
25	Trier University	Academia	Western Europe and Others Group
26	UCR	Academia	Latin American and Caribbean Group

27	UH1	Academia	African Group
28	Universidad de Buenos Aires-Facultad de Ciencias Exactas y Naturales-Departamento de Ecología Genética y Evolución	Academia	Latin American and Caribbean Group
29	Universidad de El Salvador	Academia	Latin American and Caribbean Group
30	Universidad del Cauca	Academia	Latin American and Caribbean Group
31	UNIVERSIDAD EARTH	Academia	Latin American and Caribbean Group
32	Universidad Nacional de Córdoba	Academia	Latin American and Caribbean Group
33	Universidad Nacional de Tumbes	Academia	Latin American and Caribbean Group
34	Universidade Federal do Rio de Janeiro	Academia	Latin American and Caribbean Group
35	Universitas Nasional, Jakarta, Indonesia	Academia	Asia-Pacific Group
36	Université de Bourgogne	Academia	Western Europe and Others Group
37	Université de Vigo	Academia	African Group
38	université Marrakech	Academia	African Group
39	University	Academia	Western Europe and Others Group
40	University of Bayreuth	Academia	Western Europe and Others Group
41	University of Central Lancashire	Academia	Asia-Pacific Group
42	University of Helsinki	Academia	Western Europe and Others Group
43	University of Northern British Columbia	Academia	Western Europe and Others Group
44	University of Technology Sydney	Academia	Asia-Pacific Group
45	UQ	Academia	Asia-Pacific Group
46	VICAM-CONICET	Academia	Latin American and Caribbean Group
47	AGENT GREEN	Civil Society	Eastern Europe Group
48	Asociación de Desarrollo Agrícola & Empresarial Yanapay	Civil Society	Latin American and Caribbean Group
49	Asociación Uruguaya de Guardaparques	Civil Society	Latin American and Caribbean Group
50	association ecologique de boumerdes	Civil Society	African Group
51	Aves Uruguay (Afiliada BirdLife)	Civil Society	Latin American and Caribbean Group
52	Bat Conservation International	Civil Society	Western Europe and Others Group
53	BIOM	Civil Society	Eastern Europe Group
54	BirdLife	Civil Society	Western Europe and Others Group
55	BirdLife South Africa	Civil Society	African Group
56	BSPB/BirdLife Bulgaria	Civil Society	Eastern Europe Group

57	Butterfly Conservation Europe	Civil Society	Western Europe and Others Group
58	Canadian Parks and Wilderness Society - OV	Civil Society	Western Europe and Others Group
59	CEBSE	Civil Society	Latin American and Caribbean Group
60	Centre for Environmental Resources & Sustainable Ecosystems	Civil Society	African Group
61	Centro de Incidencia Ambiental	Civil Society	Latin American and Caribbean Group
62	Conservation International	Civil Society	Asia-Pacific Group
63	Conservation International	Civil Society	Western Europe and Others Group
64	Conservation Society of Sierra Leone	Civil Society	African Group
65	Consorcio Ambiental Dominicano	Civil Society	Latin American and Caribbean Group
66	Consorcio ICCA/Centro de Estudios Médicos Interculturales CEMI	Civil Society	Latin American and Caribbean Group
67	Corbidi	Civil Society	Latin American and Caribbean Group
68	Czech Society for Ornithology	Civil Society	Eastern Europe Group
69	DIHE Karachi Pakistan	Civil Society	Asia-Pacific Group
70	Fédération Nationale des Chasseurs	Civil Society	Western Europe and Others Group
71	Foundation For Preservation of Wildlife and Cultural Assets	Civil Society	Eastern Europe Group
72	Fundación Patagonia Natural	Civil Society	Latin American and Caribbean Group
73	Fundacion Pro-Sierra Nevada de Santa Marta	Civil Society	Latin American and Caribbean Group
74	Fundacion Pro-Sierra Nevada de Santa Marta	Civil Society	Latin American and Caribbean Group
75	Gloucestershire Wildlife Trust	Civil Society	Western Europe and Others Group
76	Groupe de Recherche en Ecologie Arctique	Civil Society	Western Europe and Others Group
77	Grupo Jaragua	Civil Society	Latin American and Caribbean Group
78	Hombre Naturaleza A.C.	Civil Society	Latin American and Caribbean Group
79	ISIS.ORG	Civil Society	Western Europe and Others Group
80	IUCN	Civil Society	Western Europe and Others Group
81	IUCN	Civil Society	Western Europe and Others Group
82	Kenya Wildlife Service	Civil Society	Eastern Europe Group
83	Macedonian Ecological Society	Civil Society	Eastern Europe Group
84	Mauritian Wildlife Foundation	Civil Society	African Group

85	Nahuelbuta Natural	Civil Society	Latin American and Caribbean Group
86	Nature Conservation Centre	Civil Society	Western Europe and Others Group
87	Nature India Group	Civil Society	Asia-Pacific Group
88	Nature Kenya	Civil Society	African Group
89	NTFP-EP	Civil Society	Asia-Pacific Group
90	Organisme	Civil Society	African Group
91	PIDP	Civil Society	African Group
92	SAVE Brasil	Civil Society	Latin American and Caribbean Group
93	Save the Wild Chinchillas	Civil Society	Western Europe and Others Group
94	SEO/BirdLife	Civil Society	Western Europe and Others Group
95	Stiftung Artenschutz	Civil Society	Western Europe and Others Group
96	Subtropica Ciencia & Conservacion	Civil Society	Latin American and Caribbean Group
97	SVS/BirdLife Switzerland	Civil Society	Western Europe and Others Group
98	Syrian Society for the Conservation of Wildlife (SSCW)	Civil Society	Asia-Pacific Group
99	The Applied Research Institute-Jerusalem (ARIJ)	Civil Society	Asia-Pacific Group
100	The Corbett Foundation	Civil Society	Asia-Pacific Group
101	Ueno Zoological Gardens	Civil Society	Asia-Pacific Group
102	Urgence pour un Développement Durable au Togo (UDDI-Togo)	Civil Society	African Group
103	WCF	Civil Society	Western Europe and Others Group
104	WCS	Civil Society	Western Europe and Others Group
105	Wetlands International	Civil Society	African Group
106	Wildlife Conservation Society	Civil Society	Latin American and Caribbean Group
107	WWF	Civil Society	Western Europe and Others Group
108	Wwf - but I am responding on my own personal capacity!	Civil Society	Western Europe and Others Group
109	WWF Italy	Civil Society	Western Europe and Others Group
110	ZSTHS	Civil Society	African Group
111	Colorado Natural Heritage Program, CSU	Intergovernmental Agency	Western Europe and Others Group
112	EEA	Intergovernmental Agency	Western Europe and Others Group
113	IUCN	Intergovernmental Agency	Western Europe and Others Group
114	Ministère de l'agriculture	Intergovernmental Agency	African Group
115	SCBD	Intergovernmental Agency	Western Europe and Others Group
116	UNEP-SCBD	Intergovernmental	Western Europe and Others Group

		Agency	
117	United Nations University Institute of Water, Environment and Health (UNU-INWEH)	Intergovernmental Agency	Asia-Pacific Group
118	British Antarctic Survey	National Government	Western Europe and Others Group
119	Centre de Suivi Ecologique	National Government	African Group
120	CSIRO	National Government	Asia-Pacific Group
121	FOREST DEPARTMENT	National Government	Asia-Pacific Group
122	Forest Research Insttiute (Indian Council of Forestry Research & Education), Dehradun, India	National Government	Asia-Pacific Group
123	GCISC	National Government	Asia-Pacific Group
124	Generalitat de Catalunya	National Government	Western Europe and Others Group
125	Indian Council of Forestry Research & Education, Dehradun, India	National Government	Asia-Pacific Group
126	Instituto Amazonico de Investigaciones Cientificas - SINCHI-	National Government	Latin American and Caribbean Group
127	Instituto de biodiversidad Alexander von Humboldt	National Government	Latin American and Caribbean Group
128	ISPRA	National Government	Western Europe and Others Group
129	Jardín Botánico de la ciudad de Buenos Aires "Carlos Thays"	National Government	Latin American and Caribbean Group
130	Ministère de l'Environnement	National Government	African Group
131	Ministère Environnement et Ressources Halieutiques/ Burkina Faso	National Government	African Group
132	Ministerio Medio Ambiente	National Government	Latin American and Caribbean Group
133	Ministry of Environment and Forestry, Indonesia	National Government	Asia-Pacific Group
134	Ministry of Forestry	National Government	Asia-Pacific Group
135	MPPEHV	National Government	Latin American and Caribbean Group
136	NASA	National Government	Western Europe and Others Group
137	Natural Environment Research Council	National Government	Western Europe and Others Group
138	NOAA	National Government	Western Europe and Others Group
139	Office Burundais pour la protection de l'environnement	National Government	African Group
140	Parc National du Banc d'Arguin	National Government	African Group
141	Pennsylvania Natural Heritage Program	National Government	Western Europe and Others Group
142	Research Centre for Biology LIPI	National Government	Asia-Pacific Group
143	SERFOR	National Government	Latin American and Caribbean

			Group
144	SPM Frag'iles	National Government	Western Europe and Others Group
145	Swaziland National Trust Commission	National Government	African Group
146	TAAF	National Government	Western Europe and Others Group
147	Terres Australes et Antarctiques Françaises	National Government	Western Europe and Others Group
148	US Geological Survey	National Government	Western Europe and Others Group
149	USDA Forest Service	National Government	Western Europe and Others Group
150	Waikato Regional Council	National Government	Asia-Pacific Group
151	Archipelago Consulting	Private Sector	Western Europe and Others Group
152	Cementos Argos	Private Sector	Latin American and Caribbean Group
153	Conservation Management & Planning Systems	Private Sector	Asia-Pacific Group
154	Consultant Free Lance	Private Sector	Western Europe and Others Group
155	Consultant indépendant	Private Sector	Western Europe and Others Group
156	Daemeter Consulting	Private Sector	Asia-Pacific Group
157	Earthmind	Private Sector	Western Europe and Others Group
158	Environmental Bureau	Private Sector	African Group
159	ERM	Private Sector	Latin American and Caribbean Group
160	Freelance	Private Sector	Western Europe and Others Group
161	Fundación Solar	Private Sector	Latin American and Caribbean Group
162	Green Future Consulting	Private Sector	African Group
163	India Eco Edge Consultancy	Private Sector	Asia-Pacific Group
164	International Finance Corporation	Private Sector	African Group
165	Mergus Birding	Private Sector	Eastern Europe Group
166	National Bank For Agriculture and Rural Development	Private Sector	Asia-Pacific Group
167	PISS	Private Sector	Latin American and Caribbean Group
168	SAJE Consulting	Private Sector	Asia-Pacific Group
169	SIRAP CARIBE	Private Sector	Latin American and Caribbean Group
170	TBC	Private Sector	Western Europe and Others Group
171	Votorantim Cimentos	Private Sector	Western Europe and Others Group
172	World Commision of Protected Areas	Private Sector	Latin American and Caribbean Group
173	WRaDAC	Private Sector	African Group

Appendix 4-F: Summative Evaluation

IUCN Joint Task Force on Biodiversity & Protected Areas - Assessment of the Key Biodiversity Area End-User Engagement Process

Aims:

To encourage a retrospective evaluation of the IUCN JTF's efforts to engage end-users.

To inform best practice and similar future engagement processes.

Name:

Interview Questions

Interview questions asking about the purpose, assumptions and process of the end-user engagement.

Where did the original purpose of the end-user engagement process originate from?

Your answer

What was the purpose of the end-user engagement process?

Your answer

Were there any precedents that informed the end-user engagement process (i.e. past processes, best practice or lessons learned)?

Your answer

Did you have any assumptions about particular end-users or end-user groups prior to the end-user engagement process? If yes, what were they?

Your answer

How was the input that we elicited from end-users used and integrated into the participatory development of the KBA Standard?

Your answer

In retrospect, is there anything related to the end-user engagement process that you would have liked to have done differently or hope to do in the future?

Your answer

A document on lessons learned was developed following the IUCN PA categories engagement process. It would be useful to compile a similar document for the KBA engagement process (both for the end-user engagement component but also for the wider global multi-stakeholder engagement process). Please list anything of note (both positive and negative) and I will consolidate your input accordingly.

Your answer

Questionnaire

A few multiple choice questions on our methods and reasons for engaging end-users.

Which method of engagement best describes the end-user consultation process (interview and questionnaire components) (Rowe and Frewer, 2005)?
Communication: this involves a one-way flow of information from the sponsor (IUCN) to the representatives (end-users) and no involvement or feedback from the representatives (end-users) is sought.

Consultation: this involves a one-way flow of information from the representatives (end-users) elicited by the sponsor (IUCN); however, no formal dialogue exists between the two.

Participation: this involves information being exchanged in both directions in the form of dialogue and partnership.

Other:

Which method of engagement best describes the involvement of end-users in the technical workshops (Rowe and Frewer, 2005)?

Communication: this involves a one-way flow of information from the sponsor (IUCN) to the representatives (end-users) and no involvement or feedback from the representatives (end-users) is sought.

Consultation: this involves a one-way flow of information from the representatives (end-users) elicited by the sponsor (IUCN); however, no formal dialogue exists between the two.

Participation: this involves information being exchanged in both directions in the form of dialogue and partnership.

Other:

Which term best describes our reasons for engaging end-users (using a means to an end analogy) (Stirling, 2006)?

Normative: Normative considerations relate to the democratic right of stakeholders to participate in decision-making processes as an end in itself. A focus on equality and empowerment is a characteristic feature of this type of motivation.

Substantive: Substantive considerations focus on increasing the depth and breadth of information that informs decision making in order to enhance decision quality as a means to an end. This is in an effort to include diverse, extensive and context specific knowledge as well as to account for divergent values and interests.

Instrumental: Instrumental considerations refer to the need to restore trust and credibility, also as a means to an end. This is related to justifying decision-making.
A combination of these reasons (please elaborate on this in the space provided below)

Other:

If you selected "a combination of these reasons" or "other" above, please provide details here.

Your answer

Best Practice Guidelines and Principles

Assessment of the end-user engagement component of the wider global multi-stakeholder KBA engagement process in relation to ISEAL best practice guidelines and principles.

How did we do on the following scale:

Poor
Fair
Average
Good
Excellent

Please also elaborate in the comments field.

Credibility Principle 5 – Engagement: The standard-setter proactively engages with stakeholder groups that are likely to have an interest in the standard or that are likely to be affected by its implementation, and provides them with mechanisms for participation that are appropriate and accessible. Stakeholders feel that their views are represented in the consultation process and in decision-making. Poor - Fair - Average - Good - Excellent

Your answer

Credibility Principle 7 – Transparency: The standard and information about its development are made freely and publicly available at a minimum via an organisation's website. This includes, at least, draft and final versions of the standard, information on governance (how decisions are made and by whom, and how to participate in decision-making and standards development), and information on consultation (stakeholder input and how it was addressed in standards development). Poor - Fair - Average - Good - Excellent

Your answer

Clause 5.2 – Stakeholder Identification: At the outset of a standards development or revision process, the standard-setting organisation shall develop or update lists of sectors that have an interest in the standard and key stakeholder groups within those sectors, based on the standard's scope and its social, environmental and economic outcomes. Poor - Fair - Average - Good - Excellent

Your answer

Clause 5.2 – Stakeholder Identification (Aspirational Good Practice): The standard-setting organisation shall: a. seek to achieve representative participation in its standard-setting activities; and b. to this end, set participation goals for interest sector engagement that can be evaluated and updated over time. Poor - Fair - Average - Good - Excellent

Your answer

Clause 5.4 – Public Consultation: 1. a. The public consultation phase for standards development or revision shall include at least one round of 60 days for comment submissions by stakeholders. b. For new standards development, a second round of consultation of at least 30 days shall be included. c. Where substantive, unresolvedissues persist after the consultation round(s), or where insufficient feedback was received, the standard-setting organisation shall carry out additional rounds of consultation, as necessary. Poor - Fair - Average - Good - Excellent

Your answer

Clause 5.4 – Public Consultation: 2. The standard-setting organisation shall ensure that participation in the consultation process: a. is open to all stakeholders; and b. aims to achieve a balance of interests in the subject matter and in the geographic scope to which the standard applies. Poor - Fair - Average - Good - Excellent

Your answer

Clause 5.4 – Public Consultation: 3. The standard-setting organisation shall provide stakeholders with appropriate opportunities to contribute to the development or revision of a standard. Poor - Fair - Average - Good - Excellent

Your answer

Clause 5.4 – Public Consultation: 4. The standard-setting organisation shall: a. identify stakeholder groups that are not adequately represented; and b. proactively seek their contributions. This shall include addressing constraints faced by disadvantaged stakeholders. Poor - Fair - Average - Good - Excellent

Your answer

Clause 5.4 – Public Consultation: 5. The standard-setting organisation shall: a. compile all comments received during a consultation period; b. prepare a written synopsis of how each material issue has been addressed in the standard revision; c. make the synopsis publicly available; and d. send it to all parties that submitted comments. Poor - Fair - Average - Good - Excellent

Your answer

Clause 5.4 – Public Consultation (Aspirational Good Practice): 6. The standard-setting organisation shall make original comments received during a consultation period publicly available. Poor - Fair - Average - Good - Excellent

Your answer

SUBMIT

Appendix 4-G: Ethics

Information Sheet/Plain Language Statement

Boucher PhD Research Project

About the research project

Why? What? How?

The diversity of life on Earth is difficult to identify and quantify. Understanding where the particularly important places for biodiversity are can inform development decisions and conservation priorities. A new method, referred to as the Key Biodiversity Area (KBA) standard, consolidates existing approaches to identifying important areas for biodiversity using both science-based evidence and outcomes from a global multi-stakeholder consultation process.

The three main objectives of this research are to:

- better understand existing approaches by systematically mapping the literature.
- examine the objectives and outcomes of the multi-stakeholder global consultation process.
- evaluate how multi-stakeholder consultation influences decision-making and implementation in a variety of contexts.

Who? Where? When?

Researchers, conservation organisations and governments have identified and mapped many important places for biodiversity; however, gaps still remain. In order to address these gaps, the IUCN has held 22 global consultation workshops with subject experts as well as over 20 end-user interviews since the beginning of the process in 2004. An open online consultation with additional stakeholders is planned for 2014, prior to the finalisation and launch of the standard methodology in November 2014 at the IUCN World Parks Congress. Understanding whether involvement in the consultation process influences the legitimacy, uptake and implementation of the standard is the primary focus of this research.

Paper I: Systematic Mapping

Title: Areas of importance for the global persistence of biodiversity: a systematic literature map of site-level identification and designation approaches

Paper II: Consultation Process

Title: Global multi-stakeholder consultation for the development of the Key Biodiversity Area standard: examining the elicitation and integration of knowledge and input from end-users

Paper III: **Consultation Outcomes**

Title: Global multi-stakeholder consultation for the development of the Key Biodiversity Area standard: legitimacy, transparency and buy-in

Paper IV: **Informing Implementation**

Title: Informing decision-making contexts: planning for the implementation of the KBA standard

This research is funded by a University of Edinburgh Global Research Scholarship and a University of Edinburgh Principles Career Development Scholarship.

Who is responsible for the data collected in this research?

Jessica Boucher is an experienced interdisciplinary PhD candidate within the School of Geosciences at the University of Edinburgh. All information provided by participants will be processed and stored electronically in an encrypted format on the University of Edinburgh's secure server. This information will be used for research purposes and the raw data will be stored until December 2015. The data will not be shared. All procedures will adhere to the obligations under the Data Protection Act (1998). The research will be reviewed by the School of Geosciences Ethics Committee in 2014.

What is involved in this research?

This research involves participant observation of meetings and workshops. Interviews and questionnaires will also be used to solicit information from participants and other stakeholders. Participation is voluntary. Questions will relate to the development of the KBA standard and how it might be implemented. Please note that by participating in an interview or completing a questionnaire you have indicated your acceptance of the data protection terms and conditions indicated above.

What are the risks involved in this research?

Participant observation – it is important to be aware of the fact that the act of observing and participating can affect the deliberations and outcomes of a meeting/workshop/consultation or disrupt cultural and social norms/practices. The research will identify the risks and opportunities associated with this technique. The researcher recognises the risks and will take steps to minimize them.

Interviews/questionnaires - although your contributions to this research will be confidential, the distinctive nature of the research may result in those who are involved in the work being able to identify you/the project. You will be given the opportunity to review your interview/questionnaire transcript and to delete any information that you do not want to be used in the research.

Are there benefits to taking part in this research?

There are no direct benefits to participants. The main benefits relate to the advancement of our understanding of conservation practice and the development of a robust and transparent global standard on KBAs. If you are interested in receiving a copy of the final publication(s) please let Jessica Boucher know. Contact details provided below.

What are your rights as a participant?

Participation is voluntary and you may choose to cease participation at any time. Participation will not affect any on-going interaction with the researcher.

For more information contact:

Jessica Lynch Boucher
PhD Candidate, School of Geosciences, Environmental Change and Sustainability, Institute of Geography
Old Library, Annex G.22, Drummond Street, Edinburgh, EH8 9XP
Phone: +44 (0) 131 650 2203
Email: jessica.boucher@ed.ac.uk

Administrative Consent

A written and verbal agreement is in place regarding the collaborative relationship between the researcher and the International Union for the Conservation of Nature (IUCN). In certain circumstances, administrative consent may be sought in lieu of participants' consent when the evaluation or analysis focuses on the development of the Key Biodiversity Area (KBA) standard. For circumstances where the research involves the study, observation and evaluation of individuals, participant consent will be obtained.

The IUCN Joint Taskforce on Biodiversity and Protected Areas has two co-chairs, Stephen Woodley and Penny Langhammer. The co-chairs written consent will be sought when appropriate. The co-chairs would then be expected to explain the research to the stakeholder and obtain verbal consent when necessary. Audio recording of such verbal statements may be obtained where desirable.

Consent regarding data handling will be obtained from the co-chairs on behalf of the participants and IUCN. Guidelines concerning acknowledgement for access and use of data will be developed on a case by case basis. A verbal agreement regarding intellectual property, publications and authorship has been reached.

Both the researcher and IUCN note that when planning research outside the UK, researchers have to refer to international guidelines or conventions, European Directives, national laws or guidelines, guidelines produced by the funding bodies, institutional guidelines, local laws, and recommendations from advisory bodies and/or local stakeholders.

Both parties note that there may be implications with direct collaboration with an NGO or other non-academic organisation and how this might impact positively or negatively upon the research. A written agreement will be developed that outlines the roles, rights, obligations of team members in relation to matters such as the division of labour, responsibilities, access to and rights in data and field notes, publication, co-authorship, benefit sharing and professional liability.

Further documentation to be developed as and when needed.

Written Consent

Consolidating standards towards better conservation practice

Jessica Lynch Boucher
Environmental Change and Sustainability
School of Geosciences
University of Edinburgh

This research is funded by the University of Edinburgh Global Research Scholarship and the Principals Career Development Scholarship.

Interview Consent Form / Participant Observation Consent Form

Research Participant Name: _____

Thank you for your interest in this project. Please read the information sheet and the information below and sign if you agree. Do not hesitate to ask any questions you may have. The research is being conducted for academic purposes and will also contribute to the development of the global standard on Key Biodiversity Areas (KBAs). By signing this form, you understand the following to be true:

- The observation, interviews and questionnaires will help to inform research concerning the development of a global standard on KBAs.
- As far as possible your contributions will be confidential. Your name and affiliation will not be used; however, due to the distinct nature of this work those who are involved in the development of the KBA standard may be able to identify you or the project.
- Please feel free to leave questions blank if you would prefer to not answer them. You can also stop the interview at any time.
- The interview will be recorded on a digital recorder and the recording will be destroyed at the end of the project. The transcript will be archived so that others might learn from your experiences, but I will remove any information that would allow you to be identified.
- Your responses will help to inform this research and the development of the global standard on KBAs. By signing this form, you agree to let me use your questionnaire responses, interview statements and quotes:
  (tick as appropriate)
  (1) In academic papers, policy papers, or new articles ☐
  (2) In spoken presentations ☐
  (3) In a database which would be available to other researchers ☐

You can contact me at any time with questions or concerns: Jessica.boucher@ed.ac.uk. Institute of Geography, Drummond Street, Edinburgh, EH8 9XP.

By signing this you agree that:

(1) I am not being forced to be interviewed for this project. I understand I do not have to take part, and I can stop the interview at any time.
(2) The transcribed interview may be used as described above.
(3) I have read the information sheet.
(4) I do not expect to receive any benefit or payment for my participation.
(5) I have had sufficient time to ask questions and understand that I can contact the researcher at any time with further questions that I may have at a later date.

Signed:

_____

Print Name:

_____

Date:

_____